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Exxon and Mobil agree world's biggest merger deal

By Robert Corzine in London

A wave of consolidation and restructuring looks set to engulf the western world's oil industry as US and European companies yesterday announced separate deals that will intensify competition in a sector besieged by low prices.

In New York, Exxon announced an agreed takeover of Mobil, valued at $75.3bn based on early afternoon share prices, in the world's biggest merger. The combined entity will be known as Exxon Mobil and will be the world's largest company in revenues terms.

In Europe, Total of France confirmed it is to take over PetroFina of Belgium in a deal that will create the world's sixth biggest oil company, and Europe's third biggest, with a market capitalisation of almost $40bn.

The two moves are the latest response to the twin threats of low crude prices and a downturn in demand, especially in Asia. They follow British Petroleum's takeover last August of Amoco of the US. Analysts said they could trigger further restructuring.

Even if antitrust regulators force some divestments, with a current market capitalisation of more than $240bn, compared with former leader Royal Dutch/Shell's $160bn-plus, Exxon Mobil will tower over its competitors.

But the companies insisted that regulatory concerns may be overblown. The deal, revealed in the Financial Times last week, will set new standards for an industry which has been slow to follow the merger trend.

Lee Raymond, Exxon's chairman, who will lead the new company, and Mobil's Lucio Noto, who will be his deputy, said they expected near-term cost-savings of $2.8bn. Mr Raymond said he saw the deal resulting in 9,000 jobs lost from a combined total of 123,000. The two companies said the link-up would boost their competitiveness and ability to produce superior returns.

"The merger will enhance our ability to be an effective global competitor in a volatile world economy and in an industry that is more and more competitive," the chairmen said in a prepared statement.

The companies will control or supply almost 50,000 service stations between them. Last year they sold almost 9m barrels of petroleum products daily and had interests in 50 refineries. They earned about $12bn on aggregate revenues of $203bn.

The smaller Total PetroFina deal is significant in that it suggests national sensitivities about the fate of former state oil companies in Europe are receding.

Based on Friday's Total share price, its offer valued PetroFina at BFr19,482 per share, valuing the whole group at BFr456bn ($12.97bn). That was a 36.7 per cent premium to Friday's closing PetroFina share price of BFr14,250, and above analysts' estimates of a BFr18,000-a-share offer on Monday.

The French company's shares slid FFr87, or 12.3 per cent, to FFr618 on the weak Paris market amid suggestions that the group had overpaid.

The combined group, to be called Total Fina, will have 69,100 employees, 14,000 filling stations, reserves of 5.7bn barrels of oil equivalent, and annual sales of $54bn.

Exxon is advised by J.P. Morgan, Mobil by Goldman Sachs. J.P. Morgan and Paribas are advising Petrofina, with CSFB advising Total.

Addition reporting by Christopher Parkes in Los Angeles

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World oil prices fall sharply as stocks grow

World oil prices are less than half their level of a year ago as stocks continue to outstrip supplies. Benchmark crude fell sharply again in London yesterday, hitting $10.06 a barrel at one stage, its lowest since 1986. The price has been trading at 12-year-lows since the middle of last week, when Opec postponed a decision on production cuts. In late trading yesterday the price was down 14 cents to $10.32. Page 30

Top 10 global oil companies, measured by 1997 revenues

- Exxon Corp, $182.4bn*
- Royal Dutch/Shell, $128.1bn
- BP Amoco plc, $104bn
- Total, $46.6bn*, to reflect acquisition of PetroFina
- Texaco, $45.2bn
- Elf Aquitaine, $43.6bn
- ENI, $37bn
- Chevron Corp, $36.4bn
- Petroleos de Venezuela SA, $34.8bn
- Conoco Inc, $26.2bn*, as if spun off from parent DuPont Co.

* Pro forma Source: Reuters

French premier Lionel Jospin, left, president Jacques Chirac, centre, and German chancellor Gerhard Schröder at the Franco-German summit yesterday

Markets tumble as investors take profits

By Philip Coggan, Markets Editor

European and Asian stock markets tumbled yesterday as worries about the outlook for economic growth combined with the urge to take profits after the breakneck rally seen since early October.

In Europe, the DAX index of leading stocks in Frankfurt fell nearly 5 per cent, and the FTSE 100 index in London suffered its third biggest one-day points fall and fifth biggest percentage decline. In Hong Kong, the Hang Seng index fell 4 per cent to close below 10,000.

The first economic data of the new month showed that manufacturing industries around the globe continued to be under pressure. Purchasing managers' surveys in five European countries all indicted declining activity in the sector, as did a similar report in the US.

"It has been a bad day for European growth optimists," said Ian Harnett, director of European strategy at BT Alex Brown. "What is clear is that the consensus expectation of over 2 per cent GDP growth for Europe in 1999 looks at risk, and even our previous projections of 1.5 to 2 per cent may be too high. The implication is that corporate earnings numbers have still got further disappointments to come."

The poor economic news came in the wake of Wall Street's sharp fall on Monday, which saw the Dow Jones Industrial Average drop 216 points on a wave of selling of internet stocks.

Wall Street's weakness continued in early trading yesterday, when the Dow briefly fell more than 100 points before recovering to 9128.14, up 11.59, by lunchtime in New York.

By the end of last week, the German and French markets had each risen by a third from their October lows, while the UK and the US markets had gained between 20 and 25 per cent.

The rally was initially fuelled by interest rate cuts in the US and Europe, but has recently been propelled by the wave of mergers and acquisitions. However, even yesterday's announcement of the Exxon/Mobil and Total/Petrofina deals, failed to improve investors' mood.

London stock exchange, Page 36
World stock markets, Page 40

WORLD NEWS

Britain gives pledge of compensation to Holocaust victims

The British government told the international conference on Holocaust assets in Washington that it would repay hundreds of Holocaust victims. Their property was confiscated by the UK during the second world war because their countries were held to be allied with the Nazis. Holocaust assets, Page 3

Wider impeachment probe attacked
The White House attacked Republican moves to broaden the impeachment inquiry into US president Bill Clinton, dismissing the investigation as increasingly partisan and misguided. US and Canadian news, Page 5

Jiang's state visit backfires
China made clear its frustration and anger over Tokyo's conduct during President Jiang Zemin's visit to Japan in a sign that the meeting failed to foster understanding between the two countries. Asia-Pacific news, Page 4

Call for shift in EU spending
The European Commission is expected to call on European Union countries to restructure government expenditure in favour of investment. European news, Page 2

Sharif to meet Clinton
Pakistan prime minister Nawaz Sharif is to meet US president Bill Clinton today in Washington, hoping for US backing to deal with his country's failing foreign exchange reserves and increasing arrears on foreign debts. Asia-Pacific news, Page 4

US to increase Colombia drugs aid
The US reiterated its commitment to step up military aid to Colombia to fight the war against drugs. US and Canadian news, Page 5

Study backs breast implants
A court-appointed panel of scientific experts in the US concluded that there was no proven link between silicone breast implants and the diseases reported by women suing breast implant manufacturers. US and Canadian news, Page 5

Court to rule on disasters
London's High Court will today consider whether employees tainted by corporate disasters can sue their former employers when the stigma stops them getting a new job. The move follows the collapse of Bank of Credit and Commerce International. UK news, Page 8

Asian nations urged to spend
Asian governments must increase social spending to avoid exacerbating the social fall-out from the regional financial crisis, the International Labour Organisation warned. Asia-Pacific news, Page 4

IMF accepts Thailand deficit
Thailand plans to run a government deficit of 6.5 per cent of gross domestic product next year with the blessing of the International Monetary Fund. Asia-Pacific news, Page 4

Warning on southern Africa trade
US commerce secretary William Daley warned southern Africa that increased foreign investment depended on the abolition of trade barriers within the region and the creation of bigger markets. World trade news, Page 7

18 die in mine gas blast
A gas explosion in a coal mine in south-west China killed 38 miners and seriously injured 18.

BUSINESS NEWS

France forced to accept merger of BAe and Dasa

The French government has dropped its hostility to a merger between British Aerospace and Germany's DaimlerChrysler Aerospace (Dasa) that would initially exclude Aerospatiale of France. France had been pushing for a trilateral merger as the best way to achieve consolidation of Europe's aircraft and defence industry. Page 18; Paris, Bonn push EU finance deal, Page 2

Four international companies are to pay FFr450m ($79m) each for 7.5 per cent stakes in Thomson Multimedia, in a deal that will see 30 per cent of the French consumer electronics group's capital transferred to private hands. European companies, Page 24

Degussa, the German metals and chemicals group, reported record earnings for the fourth successive year and said it expected good results in 1999. European companies, Page 24

Coffeeg, a market-making company on the Amsterdam bourse, has had its operations suspended and an options dealer arrested. European companies, Page 24

Hoechst of Germany and Rhône-Poulenc of France have agreed to merge their pharmaceuticals and agro-chemicals businesses to create the world's biggest life sciences company. Companies and Markets, Page 19; Observer, Page 17; Lex, Page 18; Analysis, Page 24

Nomura International, the Japanese investment bank, is to put most of its UK pubs into a new company that will seek a stock market quote in the next three years. The flotation is expected to value the company at £1bn ($1.65bn). Companies and Markets, Page 19; New breed of brewers, Page 26

Losses at the international operations of CNBC, the television news channel specialising in financial markets, are likely to continue for longer than projected. Companies and Markets, Page 19; Dow builds on its strengths, Page 21

Ford, the US car and truck maker, said it aimed to corner 10 per cent of car sales in the Asia Pacific region within 10 years by expanding sales in China, Japan, Thailand and India. Asia-Pacific companies, Page 20

Statoil, the Norwegian state oil company, is closer to pulling out of Thailand after selling its offshore Bongkot field interests in a deal understood to be worth several hundred million dollars. Trade, Page 7

Countries that restrict foreign competition on their banking and capital markets are vulnerable to financial instability, according to a study by the World Trade Organisation. Trade, Page 9, Europe Page 7

Telecom Italia has asked its chief executive to complete as soon as possible negotiations over the company's plans to participate in a new digital pay TV system. European companies, Page 24

World Equity Markets
The latest trends and data from more than 50 national markets at a glance
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Majority tax voting idea stirs EU debate

By Peter Norman in Brussels

France and Germany yesterday floated the idea of majority voting in tax policy in the European Union, opening up fresh divisions ahead of the launch of the single currency.

The implicit threat to overturn the rules of unanimity on tax policy – raised in separate statements by Oskar Lafontaine, Germany's finance minister, and Dominique Strauss-Kahn, his French colleague – put both countries on a collision course with Britain.

Gordon Brown, UK chancellor of the exchequer, said at a meeting of EU finance ministers in Brussels that majority voting on tax matters would require a change in the EU treaty that itself would require unanimity. "That is simply not there," he said. Britain said it was not isolated on the issue, with Sweden and Luxembourg also opposed to majority voting on tax.

The Ecofin meeting in Brussels considered EU efforts to combat unfair practices in business taxation and touched on a commission plan for a 20 per cent withholding tax on savings.

Mr Lafontaine and Mr Strauss-Kahn floated the idea of majority voting during breaks in the meeting, but they stressed that they were expressing "personal opinions" rather than government policy.

However, the apparent co-ordination between French and German positions raised the suspicion that the two ministers were retaliating to Mr Brown's threat last week to use the national veto to block any tax measure hostile to British interests.

Other remarks from Mr Brown and Mr Lafontaine underlined growing differences over EU taxation policy between Britain and the new left-of-centre coalition in Bonn. While Mr Lafontaine repeated Germany's determination to seek progress towards minimum taxation of companies and savings during Bonn's six-month presidency of the EU starting in January, Mr Brown emphasised Britain's commitment to economic reform and liberalised capital markets.

Separately, a move by the German government, backed by France and tacitly supported by Britain, to delay the phasing out of duty free sales for travellers within the EU on July 1 1999 foundered when six member states insisted intra-EU duty free sales should cease as planned.

Ministers did, however, agree on how the 11-member euro-zone should be represented in international institutions such as the Group of Seven leading industrial countries after the start of the single currency on January 1. In a setback for the EU commission, which wanted equal status with ministers and the European central bank, the ministers said the representative should be the rotating chairman of the euro 11.

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WORLD MARKETS

STOCK MARKET INDICES		
New York lunchtime		
Dow Jones Ind Av	9,108.83	(−7.72)
NASDAQ Composite	1,970.7	(+21.16)
Europe and Far East		
CAC40	3,888.34	(−155.04)
DAX	4,781.73	(−240.97)
FTSE 100	5,537.5	(−206.4)
Nikkei	14,835.41	(−48.29)
US LUNCHTIME RATES		
Federal Funds	4.875%	
3-mth Treas Bills: Yld	4.501%	
Long Bond	102[illegible]	
Yield	5.088%	
OTHER RATES		
UK: 3-mo Interbank	6[illegible]%	(same)
UK: 10 yr Gilt	134.17	(133.82)
France: 10 yr OAT	138.23	(135.64)
Germany: 10 yr Bund	106.39	(106.18)
Japan: 10 yr JGB	105.948	(106.46)
NORTH SEA OIL (Argus)		
Brent Dated	$9.805	(9.87)

GOLD		
New York Comex		
(Dec)	$295.4	(292.5)
London	$294.15	(292.35)
EXCHANGE RATES		
Dollar		
New York lunchtime		
£	1.6535	
DM	1.681	
FFr	5.6371	
SFr	1.3797	
Y	122.475	
London		
£	1.6527	(1.6506)
DM	1.676	(1.6908)
FFr	5.6267	(5.6712)
SFr	1.3758	(1.3915)
Y	121.92	(122.92)
Tokyo close		Y 122.7
Sterling		
DM	2.7732	(2.7906)

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WORLD NEWS

EUROPE

Paris, Bonn to push for EU finance deal

By Robert Graham and Ralph Atkins in Potsdam

Germany and France pledged yesterday to push for a deal within the next six months to complete complex negotiations over the future financing of the European Union.

The two governments' ambitious commitment to tackle "Agenda 2000" came at the close of the 72nd Franco-German summit, in the German city of Potsdam, and was intended to reinforce the two countries' central role in driving forward the EU into the next century.

Despite clear differences on significant issues on EU financing, President Jacques Chirac of France said: "Whatever the differences – and they are few – we have a common approach to the problems and our ultimate objectives are the same."

Gerhard Schröder, German chancellor, welcomed France's support for his goal of reaching a deal, possibly at a special summit in March.

The pledge came ahead of the Vienna EU summit later this month and the assumption by Germany's new Social Democratic-led government of the EU presidency in the first half of next year. The Agenda 2000 negotiations touch on some of the most sensitive national issues for EU members.

Germany is demanding a significant reduction in its net contribution to the Union's budget as part of a reform of EU finances. Brussels in turn is seeking a shake up of the Common Agricultural Policy that would involve cutting EU subsidies to farmers and making up the difference from national budgets. France is opposed to such a reform.

At the same time, re-examination of EU budget contributions spotlights the British rebate, negotiated in the 1980s by Margaret Thatcher, former UK prime minister. The Mediterranean countries, particularly Spain, are being asked for a reduction in the flow of structural funds to poorer regions – which they are resisting.

Both sides at the summit recognised it would be difficult to complete negotiations by the end of Germany's presidency. "Perhaps it is an unrealistic goal to achieve by March [for the special summit] – but you have to look at the consequences on other issues, such as eastern enlargement, if it is not resolved," one of Mr Schröder's aides added.

The impact of having left-wing administrations in both Bonn and Paris was evident in the summit's commitment to promote a European pact to combat youth and long term unemployment.

But there were clear tensions over Germany's plans for a phased withdrawal from nuclear power as an energy source, and over comments by Joschka Fischer, the German Green foreign minister, urging Nato to renounce the first use of nuclear weapons. The two countries are setting up a joint working group to resolve what Mr Chirac described as "technical" problems on nuclear energy.

Duisenberg cuts euro-zone growth forecast

By Wolfgang Münchau in Frankfurt

The European Central Bank yesterday warned of a slowdown in economic growth for 1999, following new signs of a sharp deterioration in economic activity in some European countries in November.

Wim Duisenberg, president of the ECB, announced a preliminary growth forecast for the euro-zone of 2.5 per cent for next year, but warned there was a risk that the rate could fall lower.

Speaking at a press conference following a regular meeting of the ECB's governing council, Mr Duisenberg also announced a 4.5 per cent annual growth objective for M3, a measure of broad money and a key policy variable. He said the figure was a reference value, but not a formal target.

Mr Duisenberg said the reference value was based on an assumption that inflation would be 2 per cent or less, economic growth between 2 and 2.5 per cent, and that there would be a technical adjustment – accounting for between 0.5 and 1 per cent – for the velocity with which money circulates in the economy.

He said the chosen monetary target was sufficiently flexible to take account of the growing economic risks.

"Apart from global developments the most significant risk for all forecasts is that confidence within the euro area, and thereby domestic demand, could be negatively affected. Confidence in the corporate sector has already declined," he said.

His comments marked a significant change from previous statements, which gave a far more upbeat assessment of the economic outlook. The ECB had previously forecast a growth rate for 1999 of 3 per cent.

Mr Duisenberg's comments come amid increasing concerns about an economic slowdown in Germany and other core European countries. Eurostat, the European statistics office, yesterday reported that euro-zone inflation has remained at a record low during October, at an annual of 1 per cent, unchanged from September.

Mr Duisenberg said economic policy would be conducted "particularly in the interest of supporting confidence". He reiterated his call on governments to maintain a tight fiscal policy, and he also called on employers and trade unions to maintain wage moderation.

Mr Duisenberg also predicted that the 11 members of the economic and monetary union would eventually harmonise their tax rates. "I expect that something like this will happen over time – maybe decades. But the tax structures will look increasingly alike although they might not be exactly the same," he said.

Tax harmony set to stir passions further

By Peter Norman in Brussels

When Oskar Lafontaine, Germany's finance minister, and Gordon Brown, the British chancellor of the exchequer, appeared at separate press briefings in Brussels yesterday, they appeared initially to have a shared goal: to calm the furious debate that has gripped the UK on suspected plans for tax harmonisation in the European Union.

However, Mr Lafontaine's remark that he personally believed work on the tax dossier would not progress so long as decisions required unanimous votes in the EU council of ministers is sure to fuel suspicions among eurosceptics in Britain that UK sovereignty is under attack from Brussels and Bonn. Later comments by Dominique Strauss Kahn, the French finance minister, that he too believed majority voting was required will add to the impression of a German-French axis against Britain's veto.

But even without the two ministers' remarks, the tax issue would be certain to stir passions for months if not years to come. Its present prominence symbolises how the euro – due to be launched in 11 member states on January 1 – is increasing pressure for faster integration among the euro countries, leaving Britain behind.

Compared with such considerations, the actual debate on tax policy in yesterday's ecofin council was determinedly low key.

The discussions never reflected more alarmist reports of recent days suggesting Britain might have to raise income and company tax rates to be in line with Germany, or that the UK would have to abandon value added tax exemptions for food or childrens' clothes. Such proposals do not exist at present.

The EU commission's controversial proposals for a 20 per cent withholding tax on savings were discussed only in the context of its request for a procedure to initiate contacts with third countries, such as Switzerland, Liechtenstein or Monaco, to promote the establishment of equivalent measures.

Debating the EU's code of conduct against unfair practices in business taxation, the ministers did little more than take note of an interim report by Dawn Primarolo, the financial secretary to the UK treasury. Mr Lafontaine and Mr Strauss Kahn made conciliatory noises about the new German government's policy to achieve "an effective minimum taxation" of companies in the EU. Mr Lafontaine denied Germany was pushing for a floor on business tax rates, pointing out that the discussion also had to focus on taxes bases and the income levels at which tax rates took effect. The French minister noted that revenue from business taxation as a percentage of GDP was lower in France and Germany than other EU countries.

But the calm was illusory. Underlying divisions surfaced in the national press briefings. While highlighting Britain's support for the code of conduct against unfair tax practices and tax evasion, Mr Brown was adamant that the UK would not accept a compulsory withholding tax on savings.

Although Mr Lafontaine and Mr Strauss-Kahn were only expressing personal opinions about the need for majority voting on tax issues, their remarks will have served as an alarm call to the British government.

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Germany rules out increase in value added tax

Germany's centre-left government yesterday declared an end to a damaging internal dispute about tax rates by ruling out an increase next year in value added tax, writes Tony Barber in Frankfurt.

Several regional barons of the ruling Social Democratic party had embarrassed Chancellor Gerhard Schröder by calling for a rise in VAT as a way of financing tax cuts for small and medium-sized businesses.

At 16 per cent, German VAT is below the European Union average. But Mr Schröder is loath to increase any taxes that affect the general population because he won election on a platform of cutting rather than raising taxes.

Oskar Lafontaine, finance minister, sought to settle the dispute on Monday when he announced VAT would not be raised in the next year.

CAMDESSUS IN RUSSIA

IMF focus on budget deficit 'too narrow'

By Andrew Jack and Carlotta Gall in Moscow and Stephen Fidler in Washington

Michel Camdessus, International Monetary Fund managing director, arrived in Moscow yesterday for talks with the Russian government – its largest borrower.

But his arrival failed to raise hopes that a way would be found to revive a $22.6bn IMF programme that collapsed in August.

Mr Camdessus's arrival came in the wake of an IMF-sponsored private seminar in Washington, which discussed steps that should be taken to deal with the country's steep economic decline.

"I came to get better acquainted with the prime minister and, I presume, to have an interesting conversation with him," Mr Camdessus said in brief comments to reporters at Moscow's Sheremetyevo airport.

Stanley Fischer, the IMF first deputy managing director, described Monday's discussions as "frank and extremely wide-ranging". In a statement, he said IMF management and staff found the exchange of views "extremely useful in its ongoing effort to develop its policy advice to the Russian authorities".

Other participants at the discussions, some of whom preferred not to be named, said it was not clear whether the Fund could take away from the seminar discussion any useful operational guidance on how to advance its discussions with Moscow.

Peter Reddaway, a professor of politics at George Washington University, said representatives from the international financial institutions "gave the impression that they did understand better now than before the important role that politics plays".

Some speakers said they believed the IMF's focus on the budget deficit was too narrow, and ways needed to be found to encourage the economy to grow. But others felt that the budget was indeed the key, and that the government needed to improve tax collection or cut spending or both.

It was acknowledged by some at the meeting that the IMF faced a severe dilemma because of the sheer volume of debt Russia now owed to it. Russia owes some $19.1bn as at the end of October and without further IMF help its already severe debt problems are likely to increase further.

Mr Camdessus is scheduled to meet Yevgeny Primakov, the prime minister, and other officials in a series of talks ending today, as Russia continues to call for extra assistance to help close a budget deficit which one government official estimated could reach Rbs100bn ($5.6bn).

Oleg Sysuyev, President Boris Yeltsin's deputy chief of staff, said yesterday that it was unlikely the 1998 budget would be approved before the end of this year.

Embittered Turks and Kurds see no way out of maze

Anger over Ocalan cannot be underestimated, writes Leyla Boulton

Almost every mother in Turkey has at some time held her breath while watching the evening news, for that is when the names of the country's latest "martyrs" are listed.

This is the Turkish term for the thousands of soldiers killed in an atrocity-ridden 15-year war between the conscript army and the Kurdish PKK guerrilla group, whose leader, Abdullah Ocalan, is the focus of a bitter dispute between Turkey and the European Union.

A protester in Istanbul carrying a portrait of Atatürk, founder of modern Turkey, demands the extradition of Abdullah Ocalan AP

The conflict in the south-east of the country over the Kurdish struggle for autonomy has claimed about 40,000 lives and destroyed dozens of villages. It has also added more than $7bn a year to an already high budget deficit, fuelled chronically high inflation and blotted Turkey's copybook on human rights, helping block its bid to join the EU.

The fact that Mr Ocalan is held responsible by most Turks for the war means that Italy's refusal to extradite him has sparked a wave of national anger. Banners in a recent demonstration in the Turkish capital summed up the feeling: "Damn the PKK. Damn Italy." Mumtaz Soysal, a former foreign minister who writes for Hürriyet, the country's best-selling newspaper, says: "If you ask the man on the street whether he would rather have Apo [the nickname for Turkey's most wanted man] tried in Turkey or have Turkey join the European Union, he would choose the first option. So the feeling is quite strong in Turkey and that's what Europe does not understand."

The consensus that the PKK's head should be cut off means, however, that there is virtually no talk among the country's leaders about how to reconcile disgruntled elements among Turkey's 12m-strong Kurdish minority, a fifth of the country's population.

The Kurds are by no means homogenous: they comprise a disaffected mass in the south-east, refugees in the slums of big cities and well integrated communities in the west of the country who see no difference between themselves and other Turkish citizens. Such diversity might suggest that there would be a range of political options for Ankara – if it were to combine a strategy of pressing for Mr Ocalan's extradition with discussing concessions for Kurds – to address. But there is nobody to talk to.

The leader and several members of the moderate pro-Kurdish People's Democracy party were arrested simply for welcoming Mr Ocalan's forced move from his guerrilla camps in Syria to Italy as an "historic" opportunity for a solution.

"The main problem in Turkey is the Kurdish problem," says Osman Ozçelik, the party's vice-chairman. "Without solving it you can't solve the other problems."

Having won the most votes in 23 south-eastern constituencies, even though it failed to cross a 10 per cent national hurdle for entering parliament, the party sees itself as the natural interlocutor for the government.

What makes matters worse is the fact that there has been no permanent government in place in Ankara since the collapse last weeek of the coalition headed by Mesut Yilmaz.

This gives the powerful armed forces, which have focused on a "military solution" to the Kurdish problem, an even bigger say.

Turkey's constitution forbids political parties from arguing that Turkey even has "any minorities based on differences of national or religious culture or differences of sect, race or language". This has prevented any moves to allow Kurds to learn to read or write Kurdish or to have Kurdish language media, let alone anything remotely resembling autonomy. Even the PKK has stopped pressing for a separate state, which is supported by only a small minority – 11 per cent according to one recent study – of Turkey's Kurds.

Bahadir Kaleagasi, the representative in Brussels of Tusiad, the Turkish business confederation, says the problem is that no Turkish politician would dare to propose political reforms until "PKK terrorism is out of the picture". He also argues that politicians would find it easier to look for a solution if the outside world were to show more understanding for ordinary Turks' suffering at the hands of the PKK.

Turkey's politicians have been here before. In 1990, Hikmet Cetin, a Kurdish deputy who now serves as speaker of the Turkish parliament, recommended free expression of Kurds' identity, abolition of the area's state of emergency, and an ambitious programme of regional development. In 1993, President Turgut Ozal entertained the possibility of more rights for the Kurds but died the day after Mr Ocalan offered a short-lived ceasefire. In both cases, however, talk of peace was set to be undercut by more nationalistic rivals.

The difference now is that Mr Ocalan has never been so close to being isolated from the picture – the condition set by Turkey for a solution to the Kurdish problem.

EU closer to Swiss free trade accord

By Michael Smith in Brussels

The European Union yesterday removed the main obstacle to a free trade agreement with Switzerland when transport ministers agreed two innovative deals affecting charges for lorries crossing the Alps.

Neil Kinnock, EU transport commissioner, said the agreements would save the EU at least Ecu50m ($58m) a year – partly by allowing companies to use shorter routes, through Switzerland.

One of the two agreements will introduce into EU law for the first time the principle that road charges for lorries can be varied depending on environmental criteria.

"The principle is that the polluter pays," said Mr Kinnock. He hoped member states would introduce similar rules when setting up systems for charging lorries for the use of roads.

Yesterday's accords clear the way for the EU to negotiate with Switzerland a free trade pact under discussion since the Swiss rejected European Economic Area membership in 1992.

The first, reached yesterday morning, is an EU deal with Switzerland allowing increasing numbers of 40-tonne trucks to travel through that country until quota curbs are lifted in 2005. At present, Switzerland refuses access to trucks over 28 tonnes.

The Swiss agreement will help tackle growing road congestion in the Alpine area, particularly over the Brenner Pass. The European Commission said air pollution in the Alps would be reduced and EU access to Swiss markets increased.

The second deal contains rules on lorry charges in the so-called Eurovignette motorway charging system operated by Sweden, Denmark, Belgium, Germany, the Netherlands and Luxembourg. It allows differential charging based on environmental criteria, including pollution factors and weight.

The two deals were closely linked and failure to agree them in recent years had held up progress on the Swiss free trade pact, which also covers air transport, agriculture, research, public procurement, mutual recognition of standards and free movement of people.

In the Eurovignette agreement, annual charges will range from Ecu750 to Ecu1,550, with a daily rate of Ecu8. The Swiss accord will allow entry of 250,000 40-tonne trucks in the year 2000, rising to 400,000 in 2004. Trucks up to 34 tonnes will have unlimited access in 2001.

NEWS DIGEST

CALL FOR SHIFT IN EXPENDITURE

EU states urged to favour spending on investment

The European Commission is today expected to call on European Union countries to restructure government expenditure in favour of investment, especially in infrastructure, rather than current spending.

It will warn, however, that the budgetary discipline put in place ahead of economic and monetary union must not be jeopardised by any increased emphasis placed on investment spending.

The call for a change in emphasis comes in a communication from Yves-Thibault de Silguy, monetary affairs commissioner, in agreement with Jacques Santer, Commission president, and Neil Kinnock, transport commissioner. It is expected to be backed by other commissioners.

Last month, Mario Monti, single market commissioner, called for a looser interpretation of the German-inspired stability and growth pact, the cornerstone of the EU commitment to enforce fiscal discipline among the 11 members of the single currency zone.

Today's paper says that when the Commission makes assessments for the stability pact, it will take the adequacy of public investment into account. It calls for new methods to provide infrastructure through private sector involvement and for the European Investment Bank to develop instruments for sharing risk in infrastructure projects.
Michael Smith, Brussels

GREEK PRIVATISATION

Duty-free sale collapses

Greece's fast-track privatisation programme has suffered a setback with the collapse of a Dr80bn ($279m) deal to sell Hellenic Duty-Free (HDF), the state-controlled chain of duty-free shops, to a French-Greek consortium.

The finance ministry yesterday annulled the sale after Sarasco, the French duty-free operator, failed to secure its share of financing to acquire 67 per cent of HDF. The two other consortium partners, Papaellinas and Sarantis, both Greek cosmetics retailers, had already arranged financing with local banks.

DEKA, the finance ministry company which handles privatisation deals, is expected to start negotiations shortly with other bidders. **Kerin Hope, Athens**

EU EXPANSION

Hungary voices entry fears

Viktor Orban, Hungarian prime minister, yesterday voiced concern that the European Union would raise membership requirements for Hungary and other states.

Mr Orban said Hungary would be ready for EU membership in 2002 or 2003. This was the first time he has publicly accepted a possible delay to Hungary's self-appointed deadline for membership on January 1 2002.

Mr Orban said "new fears" existed in Hungary, the Czech Republic and Poland about EU requirements. In particular, Mr Orban said the EU appeared unwilling to extend free movement of labour to the new member states. **Kester Eddy, Budapest**

PORTUGUESE INTERNET CHARGES

Web surfers stage boycott

Web surfers in Portugal organised a 24-hour boycott of the internet yesterday in protest against "the exorbitant cost of a defective and slow service". The action against the tariffs charged by Portugal Telecom and other providers for accessing the internet was supported by several national organisations, including the Communist party and the CGTP-Intersindical, one of the two main trade union federations.

Users were urged not to use the internet and to make only a protest message accessible on their sites. The action follows a similar protest in Spain earlier this year. Portuguese internet users pay the highest tariffs in Europe, according to the organisers of the boycott.
Peter Wise, Lisbon

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PLEDGE OVER PROPERTY CONFISCATION

Assurance from UK on repayment

By Richard Wolffe and John Authers in Washington

The British government yesterday committed itself to repaying hundreds of Holocaust victims for millions of pounds worth of property confiscated during the second world war.

Lord Janner, the former Labour member of parliament and chairman of the Holocaust Educational Trust, told the international conference on Holocaust assets in Washington that the UK government had formally agreed to repay victims fully for assets seized in Britain.

The assets mainly involve victims from Hungary, Romania, Bulgaria and the Czech Republic, whose property was confiscated by the British government because their countries were held to be allied with the Nazis.

Lord Janner said the British government's attempts in the 1950s to repay Holocaust victims for their confiscated property had been "limited, inadequate and even grossly unfair".

The Holocaust Educational Trust has so far identified around 300 claimants from eastern Europe, Israel and Argentina who will be allowed to claim their property with "reasonable proof" of ownership.

The British announcement came on the first full day of the Washington conference, which has drawn delegates from 45 countries to discuss how to resolve the disputed claims of Holocaust survivors over assets seized during the war.

Madeleine Albright, US secretary of state, opened the conference with an emotional plea to delegates to come to an international consensus on victims' assets – in particular looted art and unpaid insurance.

Citing the memory of her Czech Jewish grandparents who were murdered in the Holocaust, Ms Albright said: "I think of the blood that is in my family veins. Does it matter what kind of blood it is? It shouldn't... But it mattered to Hitler. And that is why it matters to us all. Because that is why 6m Jews died."

She added: "The struggle to reveal and deal with the full truth surrounding the handling of Holocaust-era assets is wrenching, but also cathartic. Only by knowing and being honest about the past can we gain peace in the present and confidence in the future."

The conference heard how the most contentious issues surrounding Holocaust assets – looted Nazi gold and the dormant bank accounts of Holocaust victims – had been largely settled since last year's initial meeting in London.

The two largest Swiss banks last summer agreed a $1.25bn settlement with Holocaust survivors and their representatives.

Elan Steinberg, executive director of the World Jewish Congress – which led the worldwide campaign over Nazi gold – said: "The issue of material restitution has been arrived at with the settlement, and that issue is closed."

Swiss officials appeared relieved that the controversy over Swiss banks had receded and that attention had moved to the actions of other countries, including several eastern European countries.

At the first substantive debate of the day, the government of Slovenia pledged to contribute to an international fund for Holocaust victims, joining 15 other governments which have promised to compensate Jewish groups for looted gold and cash. The Dutch government said it would contribute $11m to the fund yesterday, bringing the fund's nominal total to more than $60m.

Italy and the UK indicated that they would begin distributing cash from the fund to Jewish groups in the near future.

The World Jewish Congress and the British delegation yesterday called for a continuing "mechanism" – and possibly a further international conference – to maintain the impetus on resolving Holocaust victims' assets.

'Portrait of Wally' by Egon Schiele. Two Schiele paintings have remained in custody at New York's Museum of Modern Art AP

LOOTED ART QUANDARY FOR MUSEUMS

US to reveal details of traffickers

By John Authers and Richard Wolffe

The US State Department is preparing to release a list naming more than 2,000 art dealers suspected of trafficking in art looted by the Nazis, it emerged yesterday as the 44-nation International Conference on Holocaust-Era Assets opened in Washington.

Stuart Eizenstat, the US undersecretary of state who has led the US reaction to the "Nazi gold" affair, said he would be publicising the list, compiled shortly after the war by the OSS, the CIA's predecessor, in an effort to rebuild confidence in the art market.

Research conducted at the time by the OSS suggested that between $2bn and $2.5bn at 1945 prices had been stolen – a figure which may have increased tenfold since then given inflation and the volatile state of the art market. A French government report published at the time suggested that about a fifth of the world's art treasures, by market value, had been stolen by the Nazis.

Art will be strongly debated today but there is little sign of agreement on how the issue should be resolved. Far more countries and far more individuals are involved than in the cases of dormant Swiss bank accounts or unpaid pre-war insurance policies, both of which are being settled with the aid of specially formed international commissions.

Galleries are unclear what policy to take. A pair of paintings by the Austrian artist Egon Schiele have remained in custody at New York's Museum of Modern Art since the beginning of the year, following claims by descendants of Holocaust victims living locally that the paintings had been stolen from their ancestors. Manhattan's district attorney has demanded that the paintings, on loan from Austria, should not leave the US, while the museum has contested the ruling. Several gallery directors and curators are at the conference in Washington.

France is at the centre of the controversy, because it has already publicised details of 2,058 artworks which are known to have been stolen and which are kept in French museums and art galleries.

Elan Steinberg, executive director of the World Jewish Congress, described these paintings as "the last prisoners of war which should now be released". He said some works had even been loaned by French museums to foreign galleries. For example, a stolen work by Utrillo was lent to a gallery in Israel. He added: "The French government, I am sure, would not want to be the beneficiary of an enrichment which we denied to the Nazis."

There is also controversy over what proportion of the art works can ultimately be traced to Jewish owners.

The problem is not restricted to France. In Britain, the Holocaust Educational Trust has published a report saying that British policy towards looted art after the war was inconsistent, "bending the rules for the well-connected, including some German aristocrats, while remaining inflexible for some victims, even where hardship and injustice would result".

Heirs of Heinrich Himmler, head of the SS, were allowed by the British to keep some of their stolen assets, according to the report, while paintings were taken from the German embassy in London, despite suggestions they were stolen.

COMPENSATION COMMITTEE BODY WILL REPORT BY THE END OF NEXT YEAR ON THE NATURE AND AMOUNT TO BE AWARDED

French bankers to support government's plans

By Samer Iskandar in Paris

French bankers have agreed to support new government initiatives to compensate victims of the Nazi occupation during the second world war.

Lionel Jospin, prime minister, announced at the weekend the creation of a body to examine individual claims for compensation. He also awarded FFr10m ($1.7m) to the Matteoli committee, named after its chairman Jean Matteoli, which is to make proposals on the nature and amount of compensation after completing an investigation by the end of next year.

"The banks believe the measures represent a crucial and very positive development in the process of identifying stolen or dormant assets and returning them to their original owners or their successors," said the French Bankers' Association (AFB), the industry's trade body. The AFB said the main banks had almost completed the tasks assigned to them under the government-led initiatives, and that they would "continue to cooperate fully in order to uncover all facts and documents relevant to the individual claims process".

The process in France is more complicated than in countries such as Switzerland – where banks have already reached an agreement with victims' representatives – because responsibility for dormant accounts is shared between the government and the private sector. Under French law, bank accounts are automatically transferred to state-controlled institutions when they have been dormant for 30 years. However, banks remain responsible for the contents of safe deposit boxes, about which the law is less clear cut.

Furthermore, any new list of dormant assets will have to be offset against assets returned as part of a government initiative launched in 1944. Mr Jospin also pledged FFr50m of public funds for the enlargement of an existing memorial to Jewish martyrs.

JIANG'S STATE VISIT ATTEMPTS TO FOSTER MUTUAL TRUST HAVE BACKFIRED OVER ISSUES OF WAR CRIMES AND UN REPRESENTATION

Japan tour leaves sour taste in Beijing

By Michiyo Nakamoto in Tokyo and James Kynge in Beijing

That's enough: China's president Jiang Zemin (right) leaving Japan with his wife after an emotionally gruelling trip AP

China made clear its frustration and anger yesterday over Tokyo's conduct during President Jiang Zemin's visit to Japan in a sign that the landmark meeting failed to breed trust and understanding between the two Asian giants.

Mr Jiang returned to Beijing on Monday leaving the public in both countries wondering whether bilateral relations might not have been better off without the much-heralded state visit – the first by a Chinese head of state to Japan.

It was bad enough that the two leaders refused to sign the bilateral communiqué, supposed to be the highlight of the visit.

Mr Jiang managed to stir resentment among his hosts by his persistent reference to Japanese atrocities against the Chinese people during the second world war and his insistence on an official apology, while the Chinese were unhappy with the Japanese refusal to apologise unequivocally for its war aggression.

A scathing editorial yesterday in the China Daily, an official newspaper, left no doubt about Beijing's hurt. Criticism centred especially on remarks made during Mr Jiang's visit by Hiromu Nonaka, the Japanese chief cabinet secretary. He was alleged to have said Japan had apologised enough for the war in China which, he said, was undertaken by a "small group of militarists".

"Unless Japan fully realises its past misdirected path and sincerely makes amends, people of the world, especially former victims, cannot but eye it with suspicion and revulsion," the newspaper editorial said. It warned China could not "watch, listen and sit while old-guard Japanese politicians and rightwing newspapers" kept "raving and blustering so close to our side".

The Japanese foreign ministry said Mr Nonaka had been misquoted. It said he was paraphrasing what Mr Jiang had said – that while some people believed Japan had apologised enough for atrocities undertaken "by a small group of people," Mr Jiang himself believed it was necessary to remember those acts.

Beijing had also hoped before the summit that Japan would at least reiterate the "three Noes", stated by President Bill Clinton in a recent visit. That is a three-part formula against Taiwan independence, the island's membership in the United Nations or other forums that require statehood, and any recognition of Taipei as a political entity separate from China.

In the event Tokyo "gave less than Clinton on Taiwan," said Gerald Segal, Asia specialist at the International Institute for Strategic Studies in London.

Diplomats suggested the chances for a substantive summit may have been scuppered two days before it started when China and Russia issued a joint declaration which appeared to undercut previous expressions of support by Moscow for Japan's permanent membership of the United Nations security council. "China is more than reluctant to let Japan accede to permanent membership of the Security Council. It wants to remain the sole voice in east Asia on the council," said Jean-Pierre Cabestan, director of the French Research Centre on Contemporary China in Hong Kong.

Yet, in spite of the apparent lack of results, some believe the visit marks a turning point in bilateral relations. "The fact that it happened was almost enough," said one western diplomat in Tokyo.

Mr Jiang had earlier postponed his scheduled visit to Tokyo – a decision attributed to unhappiness over Japanese plans to implement new security guidelines agreed with the US which could lead to Japanese involvement in places such as Taiwan. By reversing that decision and coming to Japan, Mr Jiang ensured the two countries remain engaged. For that, China will receive Y390bn ($3.2bn) in loans in the next two fiscal years. A series of co-operative deals were also signed, including assistance to tackle environmental issues.

Thailand plans deficit with nod from IMF

By Ted Bardacke in Bangkok

Thailand plans to run a government deficit of 6.5 per cent of gross domestic product next year with the blessing of the International Monetary Fund. But the government said difficulties in parliament meant it could no longer commit itself to passing crucial legal reforms within a specified time.

The deficit, set out in the country's latest letter of intent with the IMF and approved by the cabinet yesterday, includes a central government budget deficit equal to 3 per cent of GDP, a 2 per cent deficit incurred by state enterprises and local governments and a 1.5 per cent deficit to help finance the costs of restructuring the financial system.

Additional government spending announced yesterday – totalling Bt200bn ($5.5bn) or 2 per cent of GDP – will go primarily to financing public works and development programmes to help alleviate the social impact of the country's economic crisis, especially in rural areas.

With the planned increase in spending, the economy is expected to grow by 1 per cent next year after contracting at least 7 per cent this year, implying growth of between 3 and 4 per cent by the fourth quarter of 1999.

"We are confident this deficit can be quickly scaled back once growth resumes, preserving the medium-term strength of Thailand's fiscal position," the letter added. To gain acceptance of this additional spending and receive another $480m from its $17.2bn IMF rescue package, Thailand must be granted a waiver by the IMF board for missing an October 31 deadline to amend its new bankruptcy law.

Those amendments, along with new foreclosure procedures to help speed debt restructuring, and measures to open up land and corporate ownership to foreigners, are being delayed by opposition in the Senate. Commitments to pass such reforms, included in previous agreements, were omitted in the latest accord.

Analysis said the removal of the legal reform timetable could help the government politically by enabling it to reject charges that the controversial legislation is being forced on it by the IMF.

"The government will do its best to pass the laws. We are serious about enacting these laws. We think they are important and need to be passed," said Tarrin Nimmanahaeminda, finance minister. Banking reform measures are on track, including implementing strict provisioning requirements and a pledge to have the six remaining private sector banks submit realistic capital raising plans next month.

HK plays down tax cut hopes

By Louise Lucas in Hong Kong

Donald Tsang, Hong Kong's financial secretary, yesterday warned that there would be little opportunity for new spending or for tax cuts in the budget next year.

The government, facing a fiscal deficit of at least HK$20bn (US$2.6bn) this year, has come under pressure to offer both. Rising unemployment has intensified calls to increase welfare spending, while some in the business community have argued for tax concessions to enhance competitiveness.

Concerns over competitiveness have grown after Singapore's decision to cut wages and property tax rebates. Some infrastructure costs have been trimmed, including airport fees.

Charges at Chek Lap Kok, Hong Kong's new airport, rank second only to Japan, airline chiefs say. The industry is pushing for a reduction in charges, arguing that the ailing tourism and retail sectors will suffer if Hong Kong loses the edge as an aviation hub.

The Heritage Foundation, the Washington-based rightwing think-tank, has suggested in its annual index of economic freedom that Hong Kong is in danger of losing its status as the world's freest economy – to Singapore. The index is based on various measures, including trade policy, taxation and monetary policy.

After the government's stock market intervention earlier this year, Hong Kong "will not be in the number one position a year from now, unless it sees the error of its ways", said Edwin Feulner, foundation president. The government has said it will divest its HK$118bn share portfolio but is unlikely to do so in the near term.

Policy rethink urged for Asia

By Louise Lucas

Asian governments must rethink policy and increase social spending to avoid exacerbating the social fallout from the regional financial crisis, the International Labour Organisation warned yesterday.

"Just as the Depression in the 1930s forged a new social contract in industrialised countries in the 1930s, so must the current Asia crisis serve as an impetus to creating a more socially-oriented model for development," said Eddy Lee, a director of ILO and author of its latest report*.

The unemployment toll in Asia had risen faster than most analysts predicted. According to the ILO, one in every five formal sector jobs in Indonesia had been wiped out this year.

It expected an additional 20 per cent of the Indonesian population, or around 40m people, to fall into poverty in 1998.

Despite the rising ranks of unemployed, only South Korea provided unemployment benefits and these, the ILO said, were modest and only paid for a short duration. Elsewhere, those who helped fuel the Asian economic miracle have ultimately been failed by it.

"The gamble that you could have rapid economic growth and that could take care of social problems has been proven by the dramatic nature of the crisis to have been ill advised," said Mr Lee.

He argued that the creation of unemployment insurance would be both feasible and affordable for Asian governments, requiring a contribution of just 1 to 4 per cent of payroll, or a fraction of GDP.

**The Asian Financial Crisis: The Challenge for Social Policy.*

SHARIF'S WASHINGTON VISIT HEADWAY ON NUCLEAR ISSUES ARE VITAL IN RETURN FOR ECONOMIC SUPPORT

Pakistan PM faces a determined US

By Stephen Fidler in Washington and Farhan Bokhari in Islamabad

Nawaz Sharif, the Pakistan prime minister, meets President Bill Clinton today in Washington, hoping to secure US backing to deal with his country's falling foreign exchange reserves and increasing arrears on its foreign debts.

But to do this, Mr Sharif – who in May triggered US sanctions by authorising nuclear weapons tests in response to testing by Pakistan's neighbour and rival, India – must satisfy Mr Clinton's administration that Pakistan's nuclear programme will not further destabilise the region.

The US has already indicated that it will ease some sanctions because of Pakistan's response to its security concerns. Because of Pakistan's economic plight, the US has said it will not stand in the way of an economic programme with the International Monetary Fund or loans from the World Bank to support it. The main elements of an IMF programme were agreed with the Fund last week.

The country's foreign exchange reserves have fallen sharply to just over $400m, equivalent to less than two weeks of imports, and it has accumulated almost $1.4bn in unpaid debts to commercial banks and other creditors since June, when sanctions were imposed.

US officials say that they will be urging the Pakistani leader to take several important steps over its nuclear programme. Washington wants Mr Sharif to follow up an announcement he made at the United Nations in September with signature and ratification of the Comprehensive Test Ban Treaty.

It is calling on Pakistan to stop production of fissile material, and to commit itself to stop the further spread of the nuclear technology. Last, the US is urging "strategic restraint" on Pakistan, signalling it wants it to stop missile tests and not place nuclear warheads on weapons.

"This is the area where the greatest amount of work still has to be done," a US State Department official said.

According to Pakistani officials, Pakistan is likely to offer further assurances on signing the CTBT. Islamabad is also preparing new draft laws to prevent the export of fissile material.

US officials say the issue of Kashmir – the main flashpoint of the rivalry between India and Pakistan – is expected to be raised in the talks, with the US likely to urge a "serious dialogue" between the two countries over the issue.

According to Siddique Kanju, Pakistan's junior foreign minister: "We are now sitting on a nuclearised south Asia which has increased the sensitivity of the region to the international community."

Mr Sharif's critics, including the opposition Pakistan People's party (PPP) warn that a series of domestic controversies have weakened his position, and made it difficult for him to concede ground without facing accusations of a sell-out on vital national interests.

According to Khalid Mehmood, a senior analyst at Islamabad's Institute for Regional Studies, "Pakistan has no choice, no option left, but to sign the CTBT, to overcome its severe economic problems".

At today's White House meeting, Mr Clinton will be joined by Madeleine Albright, US secretary of state. Mr Sharif will also meet William Cohen, the defence secretary, and Robert Rubin, treasury secretary. Talks are also expected with IMF and World Bank officials.

NEWS DIGEST

JAPANESE CORRUPTION SCANDAL

Fuji Heavy chief arrested on bribery allegations

Isamu Kawai, chairman of Fuji Heavy Industries, was arrested yesterday on suspicion of bribing a member of parliament in order to win a defence agency contract to develop a military aircraft.

The prosecutor's office also raided the headquarters of Fuji Heavy, maker of Legacy station wagons and a leading supplier to the defence agency. Mr Kawai, who joined Fuji Heavy from Nissan Diesel, where he was formerly president, has been a central figure in the Japanese defence industry.

Mr Kawai is accused of instructing a former managing director at Fuji Heavy, who was arrested earlier this month, to give Yojiro Nakajima, a member of parliament for the ruling Liberal Democratic party, Y5m ($40,600) in appreciation for his work to ensure Fuji Heavy received part of the defence agency contract to build the amphibious aircraft.

Mr Nakajima was parliamentary deputy minister at the defence agency when the bidding process was under way. **Michiyo Nakamoto, Tokyo**

INDEPENDENT MP QUITS

NZ government under pressure

The future of New Zealand's minority government led by Jenny Shipley of the National party looked shakier last night after the surprise resignation of Deborah Morris, an independent member of parliament, over defence spending issues. Her resignation deepens the National party's problems in having to rely on independent members for its single seat majority.

Ms Morris resigned just an hour after the government announced it was going ahead with a controversial plan to lease a squadron of 28 F-16 fighters from the US. Ms Morris had supported the government on important issues. She said she was opposed to further defence spending but that the decision to buy the F-16s was just one of a number of issues that had led to her decision to resign from parliament. The National party had bowed to its critics in deciding not to buy a third Anzac class frigate from Australia but agreed to boost defence spending and increase the size of the armed forces by 500 personel. **Terry Hall, Wellington**

NATIONAL PARK

Canberra refuses to halt mine

The Australian government yesterday rejected a request by the United Nations World Heritage committee to halt construction of a uranium mine in a national park. Canberra said it would compile a "comprehensive rebuttal" of the committee's criticisms of the Jabiluka mine project in the Northern Territory.

The mine is located within the World Heritage-listed Kakadu national park but is not technically part of the park. Mining leases held by Energy Resources of Australia for Jabiluka and the nearby Ranger uranium mine predated the World Heritage listing, officials said.

The committee asked the Australian government this week to order suspension of construction on Jabiluka until further environmental assessments could be made. It gave Australia until April to prove the mine did not pose a grave threat to the park. Robert Hill, Australia's environment minister, said the World Heritage report, which claimed the mine would severely endanger the cultural and natural values of Kakadu park, was "biased, unbalanced and lacking in objectivity". **Gwen Robinson, Sydney**

DEMOCRACY MOVEMENT

Beijing detains top dissidents

In an apparent attempt to crush a budding opposition party, Chinese police have detained two prominent dissidents and three other democracy campaigners, a human rights group and relatives of those taken into custody said yesterday. Police in two cities descended on the homes of Xu Wenli, Qin Yongmin and other members of the China Democracy party on Monday night and took them away, the group said.

The action was one of the harshest since dissidents announced the formation of the would-be opposition group in June to challenge the Communist party's monopoly on power.

Li Peng, the party's legislative chairman, was quoted yesterday as saying western-style democracy was inappropriate for China and opposition groups would not be tolerated. If organisations seek a "multi-party system and try to negate the leadership of the Communist party, then they will not be allowed to exist," he said. **AP, Beijing**

NEW JAPANESE CARS

Sales fall 13.8% in November

Sales of new cars in November fell by 13.8 per cent year-on-year to 239,409 units, the Japan Automobile Dealers Association said yesterday. In October, new-car sales fell by 14.0 per cent. Including sales of trucks and buses, total new motor vehicle sales in November fell by 15.9 per cent year-on-year to 326,551 units, it said, after a fall in October of 17.1 per cent.

Toyota Motor's November sales fell by 14.5 per cent year-on-year to 143,424 units; Nissan sales declined by 11.0 per cent year-on-year to 63,268; Honda's sales dropped by 33.7 per cent year-on-year to 32,344; and Mitsubishi sales declined by 15 per cent year to 23,692. Mazda Motor's November vehicle sales rose 9.5 per cent year-on-year to 19,425 units.

Sales of imported motor vehicles fell 17.1 per cent year-on-year to 22,252 units, the association said. **AFX, Tokyo**

Chilean trial for Pinochet 'not possible'

By Imogen Mark in Santiago, Andrew Parker in London and David White in Madrid

Politicians from the Socialist party of José Miguel Insulza, the Chilean foreign minister, have written to Jack Straw, UK home secretary, insisting that General Augusto Pinochet could not be brought to justice in Chile.

Listing a series of judicial and political obstacles which would, they say, have to be removed in order to resolve the issue, the politicians have taken an opposite line to that of Mr Insulza, who is in Europe trying to prevent the former dictator's extradition from the UK to Spain on charges of genocide, terrorism and torture.

The Socialists have urged a limit to the scope of the military courts (which routinely take over jurisdiction in a case in which the military are involved), and repeal of an amnesty which pardons all those involved in political crimes committed between 1973 and 1980.

Mr Straw has until December 11 to decide whether to authorise extradition proceedings. Gen Pinochet was arrested on October 16.

Mr Insulza said yesterday his talks in London and Madrid had produced "some positive signs" about a solution to the case. But he refused to say what these were, and made clear he had received "no commitment from anybody".

After meeting his Spanish counterpart, Abel Matutes, he raised the prospect of a trial in Chile if Gen Pinochet's immunity as a member of the Senate was lifted. But he said the Chilean government was under no obligation to promise a trial.


Straw: to decide on extradition


Pinochet: left hospital

Gen Pinochet was last night reported to have left the UK hospital he stayed in while fighting extradition to Spain, for a house in south London. London's Grovelands Priory hospital said it had asked him to leave because he had recovered from back surgery.

Michael Caplan, Gen Pinochet's lawyer, said he was "distressed" about the hospital's decision to say publicly it wanted him to leave: "The senator has always been anxious to move from the hospital as soon as possible."

An opinion poll in yesterday's London Evening Standard found that 51 per cent of those questioned wanted Gen Pinochet to be extradited to Spain. Only 32 per cent want him to be allowed to return to Chile.

Madeleine Albright, US secretary of state, said this week that consideration should be given to Chile's fledgling democracy. Despite this, the UK government insisted Mrs Albright had not asked for Gen Pinochet to be allowed to return to Chile during a telephone conversation with Robin Cook, UK foreign secretary, on November 21.

PANEL INQUIRY STUDY IMPLIES BILLION-DOLLAR LAWSUITS ARE WITHOUT MERIT

Implants 'not linked to illness'

By Richard Tomkins in New York

A court-appointed panel of scientific experts yesterday concluded that there was no proven link between silicone breast implants and the diseases reported by women suing breast implant manufacturers.

The four-member National Science Panel, which reported its findings after studying the available evidence for two years, is the most authoritative body yet to have studied the evidence in the US.

Its findings imply that the billions of dollars' worth of claims against Dow Corning and other breast implant manufacturers are without merit. However, the report comes too late to affect settlements already reached by breast implant manufacturers – including Dow Corning's $3.2bn settlement with lawyers representing 176,000 claimants last month.

The panel was formed in October 1996 by Judge Sam Pointer, the federal judge presiding over the Dow Corning case and other breast implant litigation.

Its task was to review the available evidence on the possibility of links between silicone breast implants and the diseases reported by women filing lawsuits.

Yesterday it unanimously reported that it could find no conclusive evidence of any such links in the four main areas it had studied – immunology, epidemiology, toxicology and rheumatology.

"The material presented represents an analysis of the most rigorous and relevant scientific information currently available," it said.

The panel's finding is in line with many other studies around the world, including one from a government-appointed independent review group in Britain earlier this year, which have found no evidence linking breast implants with disease.

Dow Corning called the report "good news for women and good news for Dow Corning", saying women had yet to vote on its offer of a $3.2bn settlement.

But those involved in the breast implant litigation said the report proved nothing. Diana Zuckerman, a board member of the National Women's Health Network, said: "It is very careful not to say that breast implants get a clean bill of health."

Ms Zuckerman said the report covered only the diseases most frequently figuring in breast implant litigation – auto-immune responses and connective tissue diseases – ignoring the many other diseases of concern to women with implants.

In addition, Ms Zuckerman said, the report was not new research, but a review of existing research, so its findings were not a surprise.

Even so, the report is likely to prove influential in any further breast implant litigation because its findings can be used in courts across the US. The panel's members are due to give videotaped, sworn statements that can be used in evidence.

The report is also likely to add to the controversy over the use of so-called junk science in US court cases, which has resulted in payouts of billions of dollars to settle claims based on flawed science.

Quebec voters plump for more of the same

By Edward Alden in Toronto

The provincial election in Quebec on Monday had been billed as an historic battle that would go a long way to resolving the lingering question of Quebec's place in Canada.

But after all the sound and fury, it resolved nothing, which appears to be exactly what Quebec voters wanted.

It opens the door to the one choice, the only choice, almost all Quebeckers can agree on: a permanent campaign to extract from Ottawa ever more powers for the Quebec government by holding out the ultimate threat of separation.

Premier Lucien Bouchard, who heads the separatist Parti Québécois, was returned with a safe majority, winning 75 of the 125 seats in the provincial legislature. But the PQ lost two percentage points in the popular vote from its 1994 victory, finishing with just 43 per cent support.

Jean Charest, former federal Conservative leader who had been touted as the last, best hope for a pro-Canada government in Quebec, did little better than his predecessor Daniel Johnson.

After enjoying a big lead over Mr Bouchard earlier this year, Mr Charest won only 48 seats, one more than in 1994, and saw the party's popular vote drop nearly one percentage point to 44 per cent. But he avoided the humiliating defeat polls had predicted.

The only obvious winner was third party candidate Mario Dumont, a former Liberal who heads the fiscally conservative Action Democratique. His party jumped from 7 per cent to 12 per cent of the popular vote, though it again won only one seat.

The ambiguous outcome leaves Mr Bouchard's next moves very much in doubt. In his acceptance speech, he said, in French, that he had a mandate "to create the winning conditions for a referendum", implying that he plans to hold another vote on separation from Canada. But, in English, Mr Bouchard said to voters he recognised "the signal you send by choosing candidates who reflect your attachment to Canada".

With some 58 per cent of Quebeckers opposing a switch in sovereignty, and two-thirds saying they do not want another referendum, it will be difficult for Mr Bouchard to call a vote on separation soon.

That leaves a stalemate. The rest of Canada is unwilling to amend the constitution to give Quebec special powers within the confederation. Quebeckers, while unhappy with the status quo, are unwilling to vote their way out of Canada.

The next act is expected to be negotiations on a so-called "social union".

All 10 provinces, Quebec included, have long been upset by Ottawa's ability to use its spending power to launch its own programmes in areas of provincial jurisdiction such as health, education and welfare. The provinces have agreed to press Ottawa for a new funding formula allowing them to opt out of federal programmes with financial compensation in areas under provincial jurisdiction.

After initially refusing to participate in the discussions, Mr Bouchard said in the campaign he would join the talks, even insisting on a February deadline for Ottawa to accept the proposal.

If Ottawa accepts, Quebec will opt out and gain more powers and more federal tax dollars; if Ottawa refuses, Mr Bouchard can insist sovereignty is the only viable alternative.

Mr Charest insists the talks will force the premier to shed the ambiguity that served him well but, with Quebec voters once again boldly asserting their own ambivalence, it is hard to imagine a clear answer emerging soon.

NEWS DIGEST

IMPEACHMENT HEARINGS

White House attacks plans to broaden inquiry

The White House yesterday attacked Republican moves to broaden the impeachment inquiry into President Bill Clinton, dismissing the investigation as increasingly partisan and misguided.

Joe Lockhart, the president's press secretary, said the decision by the House judiciary committee to examine allegations of campaign fundraising abuses in the 1996 election was a desperate fishing expedition by extremist Republicans. However, Republicans insisted the move was justified. "We have information that we cannot ignore and the committee would be derelict in its duty if it did ignore them," a committee aide said.

The sniping comes as the impeachment issue moves towards a vote this month. **Mark Suzman, Washington**

US ECONOMY

Survey points to recovery

The US manufacturing sector slowed for the sixth straight month in November, but there are signs of a possible improvement in the economy by the middle of next year, according to two reports issued yesterday.

The National Association of Purchasing Management, which tracks the manufacturing sector through a survey of corporate purchasing executives, said new orders, exports and imports declined at many factories last month.

The trade group's index of economic activity was 48.8 per cent, down 1.5 points from October. A reading under 50 per cent is a sign of contraction in the industrial sector.

But The Conference Board, a private research group, reported its index of leading economic indicators rose 0.1 points in October, to 105.6. The gain followed two months of flat results. **Agencies, New York and Washington**

CUBAN IDEOLOGY

Christmas every year

Cuba's ruling Communist party has apparently decided that Santa Claus and the celebration of the birthday of Christ no longer represent a threat to the nation's ideological integrity.

In a statement published yesterday, the party's Politburo confirmed that Christmas was being permanently restored in Cuba after an absence of nearly three decades.

The move will make permanent the Christmas Day holiday provisionally granted last year by President Fidel Castro as an "exceptional" one-off goodwill gesture to honour Pope John Paul II, who visited the island in January.

But lest the restoration of Christmas give the impression that it was going soft, the Politburo declared that Cuba's revolution was "indestructible" and would continue to defy all attempts to destroy it. **Pascal Fletcher, Havana**

On the web today

- Anti-gun lobby may find it hard to hit target in court
- US to step up Colombia drugs aid
- Bishop's death leaves Guatemalans thinking there has been a cover-up

http://www.FT.com/Americas

LEBANESE POLITICS FORMER PREMIER AL-HOSS WINS BACKING AFTER HARIRI DECLINES TO SERVE AGAIN □ MARKETS WAIT AND SEE

Veteran politician set to head Beirut government

By James Schofield in Beirut

Lebanon's president yesterday won solid backing to name veteran politician Selim al-Hoss to head a new government after the resignation of prime minister Rafik al-Hariri, the country's dominant political figure.

Mr Hoss served as prime minister repeatedly during the 1975-90 civil war and enjoys good relations with all Lebanon's political factions. He is expected to appointed today.

On Monday, Mr Hariri informed Gen Emile Lahoud, the president, he could not accept nomination to lead his fourth successive government, citing an alleged constitutional breach of principles by the president and 31 parliamentary deputies.

As Gen Lahoud consulted members of parliament about a successor to Mr Hariri, the financial markets – stunned at the decision of Mr Hariri to leave rather than let Gen Lahoud chip away at his powers – waited nervously to see who would be in the next cabinet.

Analysts have commented that the relatively subdued market reaction was an important first test for the post-Hariri Lebanese economy.

But others have warned that a truer test might come only when the new cabinet is named in a few days' time.

Abdallah Ghantous, owner of the AGG group, franchise holder for a network of companies in Lebanon, Syria, Jordan, Oman and Gaza, ranging from fast food to engineering, said businessmen would wait and see.

"As an investor, I have to sit and watch and be very careful but this will not stop Lebanon from moving forward. It all depends now on what kind of cabinet they're going to have."

Like many other Lebanese, Mr Ghantous said he was hoping to see a cabinet of new names and technocrats, instead of men tarnished by allegations of sectarianism, cronyism and corruption.

At the same time, investors have generally perceived Mr Hariri, with his extraordinary range of international contacts, as a guarantor of their success.

But in Beirut, Hani Husami, general manager of the National Commercial Bank of Saudi Arabia, said that Saudi reaction had been subdued.

"People are wary. But they haven't panicked and we haven't seen anything to the effect of 'please get me out of the Lebanese pound'. We have had a lot of calls but not from people saying 'please get me out'."

Mr Marwan Barakat, head of the economic research unit at Bank Audi, said he regarded the relatively stable market as a sign of the progress made by Lebanon in the years since the civil war.

"A combination of Lahoud and Hoss is acceptable today when it would not have been acceptable last year when you might have had [former President Elias] Hrawi and Hoss. The personality of the prime minister is not as important to the markets as it used to be."

He accepted that Mr Hariri had inspired international confidence while his contacts had enabled Lebanon to draw on vital funding from the Gulf States.

Gen Lahoud: Former prime minister Rafik al-Hariri stood down rather than let the president chip away at his powers

Use of pension fund puts Palestinian openness in doubt

Judy Dempsey on the way the $160m assets of the Gaza Pension Fund have been managed since they were handed over by the Israelis

Having transferred more than $2bn to the West Bank and Gaza since 1993 and this week pledged a further $3bn over the next five years, donor countries and international organisations have begun to ask uncomfortable questions about the lack of transparency in the Palestinian Authority.

Management of the Gaza Pension Fund (GPF) is but one example.

Established to finance the pensions of 6,500 Palestinians from Gaza who, until 1994, had worked for the Israeli Civil Administration (which ran Gaza and still oversees parts of the West Bank), the GPF amassed capital of some $160m.

In an internal report last year, the International Monetary Fund criticised the authority's lack of a "central record kept on pension rights for employees". It said it had "no audited financial statements" and no "checks and balances to ensure financial integrity of the funds..."

Under the terms of the protocol on economic relations (part of the Oslo peace accords) signed in Paris in April 1994 by Israel and the Palestine Liberation Organisation, it was stipulated that the fund, contributed to by Palestinian and Israeli employers, be used only for pensions.

In 1996 Israel started transferring the fund in dollars to a US bank in New York under the terms of an agreement with the Palestinian Authority, which employed Morgan Stanley, the US investment bank, to manage the fund. In late 1996 the Authority dismissed Morgan Stanley's services.

"Morgan Stanley refused to give us more than 3.5 per cent interest," Freih Abu Meddein, Palestinian justice minister and chairman of the government-controlled Gaza Insurance and Pension General Corporation, said in an interview recently.

Morgan Stanley has declined to comment. A source close to the bank said it "disliked certain management aspects of the PA".

Yassir Arafat, PA president, then wrote to Israel, confirming the break with Morgan Stanley. He also instructed Israel to transfer the remainder of the fund to Credit Suisse, the Swiss bank, in Zurich and appointed Ballista, described by an Israeli government official as an Irish off-shore investment management company. The Irish Securities Authority said it had no record of Ballista. Credit Suisse would not comment.

By early 1997, Mr Meddein and Mohammad Rashid, also known as Khaled Salam, Mr Arafat's main economic adviser, ended the contract with Ballista. By that time Israel had completed transferring the $160m.

Since then, according to Palestinian officials, the GPF has been the subject of much in-fighting between Nabil Shaath, Palestinian minister of international co-operation, and Mr Rashid, over how to invest it.

According to Palestinian officials, about $8m was transferred to a branch of the Arab Bank, a large Middle Eastern bank, in Gaza.

In August of last year Mr Arafat wanted access to the fund to pay the police after Israel temporarily withheld transferring excise tax and other payments owed to the Palestinians.

"Arafat needed about $28m," said a Palestinian official. The European Commission stepped in, allowing Mr Arafat to draw on a cash facility of Ecu30m ($34.8m).

Still, about $28m of the fund found its way to Gaza. "We wanted to invest some of it in projects, such as telecoms," said Mr Meddein. The vice-president and one of the main shareholders of Palestinian Telecommunications (Paltel), a publicly listed monopoly licensed by the Palestinian Authority, is Mr Rashid.

Regarded by many Palestinians as the éminence grise in the Authority, Mr Rashid is also responsible for overseeing the PA-licensed monopolies for fuel, tobacco and cement as well as the casino in Jericho. He also controls Sky, an advertising company that operates as a monopoly.

None of the estimated annual $150m revenues earned by the monopolies are consolidated in the finance ministry's annual accounts, despite repeated promises to the IMF and World Bank, just as no clear picture has emerged of how the Gaza pension fund is being managed.

Mr Rashid was not available for comment in spite of repeated attempts over the past five months.

The way the GPF has been managed may persuade Israel to be more than cautious in how it should transfer hundreds of millions of shekels of pension contributions it has paid into a separate fund to Palestinians who have worked in Israel since 1970.

Israeli labour ministry officials said they want to negotiate the transfer. But under the terms of the Oslo accords, it can only do so once the Palestinians establish a "relevant pension insurance institution". In spite of repeated requests – and offers of assistance by the EU – the PA has yet to establish such a fund.

Tanzania calls for arbitration in power row

By Mark Turner in Dar-es-Salaam

Tanzania has submitted a dispute with Independent Power Tanzania Limited (IPTL), a Malaysian-financed electricity supply company, to international arbitration.

Baruany Luhanga, the head of Tanesco, the state-owned electricity supply company, announced last week that he had referred a dispute over the cost of IPTL's newly-built 100MW thermal power station to the Washington-based International Centre for the Settlement of Disputes.

IPTL is claiming that the station cost $150m to build, and is demanding payments from Tanesco of more than $4m a month under the terms of a power purchase agreement signed in 1995. Tanesco says similar plants elsewhere cost closer to $90m, and that the monthly bill should not exceed $2.2m.

The decision to seek arbitration marks a watershed in a long-running saga which prompted the World Bank, together with Ocelot Energy of Canada and TransCanada Pipelines, to suspend work on the Songo-Songo natural gas project, one of Tanzania's largest ever foreign investments, in mid-1997.

Although most of Tanzania's electricity requirement is provided by several giant hydro-electric dams, poor maintenance and bad management has led to very insecure supply over recent years, prompting the government to look for back-up systems.

The $375m Songo-Songo project involved revitalising gas wells on and near an island off Tanzania's coast, and piping it to an emergency power plant at Ubungo, near Dar-es-Salaam which is currently running on imported liquid fuel. Once in place, Tanesco would pay Songas, the company formed to run the project, $6m a month (although the figure has risen over recent months).

In mid-1997, however, the Songo-Songo team learned of IPTL demands from Tanesco for monthly payments, and decided that the government could not afford both projects. It also shelved plans to build a new 30MW generator at Ubungo, for fear of over-supplying the market.

As the year went on, evidence mounted that the IPTL project was going to be very expensive by global standards, that not all of its dealings were entirely transparent and that in any case, Tanzania did not need 100MW of new electricity capacity.

Under growing pressure, Tanesco served a notice of default to IPTL in April this year, claiming that it had departed from contract specifications, and that it had not used prudent financial judgment.

The affair was highly embarrassing for the government which had pinned a great deal on "South-South" co-operation with Malaysia and strongly endorsed the IPTL project.

But the latest move, which will open the minutiae of the deal to international scrutiny, has been welcomed by donors. "This is a victory for good governance, and is 'a courageous step by the government,'" said an IMF official.

It also makes it increasingly likely that the Songo-Songo project will be restarted, perhaps by the middle of next year.

"This gives a clear indication that the government is dealing with IPTL in a responsible manner," said Jim McCardle, Songas' managing director.

"It allows us to reassess the project and see if we can go ahead. We are hopeful we can," he added.

the company 339.79 to 10,402.34,

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Liberalisation is good for stability, says WTO study

By Guy de Jonquières

Countries that severely restrict foreign competition in their banking and capital markets are highly vulnerable to financial instability, according to a study by World Trade Organisation researchers.

The study, based on an analysis of 27 developing economies, finds that those which have suffered from financial turmoil during the 1990s impose much tighter restrictions on trade in financial services than those that have avoided a crisis.

The findings challenge conventional wisdom in some troubled developing countries, where recent turbulence has induced caution towards further financial services liberalisation and, in the case of Malaysia, led to reimposition of capital controls.

The study says financial stability has been greatest in countries that have opened financial services to wide competition and permit foreign institutions to establish a commercial presence and operate freely in their markets.

The biggest benefits of liberalisation came from allowing foreign institutions to establish a local commercial presence – rather than just supply a limited number of services from abroad – because that did most to promote competition, efficiency, transparency and better information.

"If foreign service providers are allowed to supply a broad range of services, rather than only lending and deposit taking, they are likely to develop bond and stock markets or, in other words, financial market broadening and deepening," the study says.

Equally important, countries that liberalised regulations on commercial presence did not need to remove all capital controls, because foreign institutions' local affiliates could fund many of their activities domestically.

The study finds that developing countries which committed themselves in last year's WTO financial services agreement to the most liberal policies towards foreign commercial presence have enjoyed the most stable foreign direct and portfolio investment flows.

However, policies that restricted international competition to the supply of financial services across borders increased the risk of financial instability by encouraging foreign institutions to focus on short-term business, which relied heavily on financing from abroad.

Based on an analysis of countries' commitments in the financial services agreement, due to take effect next year, the study finds Argentina, Ghana, the Czech Republic, Slovakia, Hungary and Morocco have the policies most likely to favour financial stability. Developing countries with policies most likely to produce financial volatility included Indonesia, Korea, Poland, Romania, Brazil and Venezuela.

Financial services trade, capital flows and financial instability. Staff working paper ERAD 98-12, Economic Research and Analysis Division, World Trade Organisation, rue de Lausanne 154, CH-1211 Geneva 21, Switzerland. Tel: (4122) 739 5111.

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TELECOMS LIBERALISATION TELEFONICA TO CHALLENGE 30% CUT IN INTERCONNECTION FEES AS MARKET CONTINUES TO OPEN UP

Debut for Spain's third fixed-line operator

By Tom Burns in Madrid

Spain yesterday took a big step in the liberalisation of its telecommunications sector. This came with the start-up of Uni2, a third fixed-line carrier – controlled by France Telecom – which will initially operate long distance calls.

Under the open market guidelines, more than 20 providers of niche telephony services have applied for licences to the Telecommunications Market Commission (CMT), a newly created independent regulator, which will supervise the sector.

British Telecommunications, which already operates a data transmission company in Spain and is a main backer of Airtel, a second mobile phone carrier, is likely to add basic telephony services to its Spanish business early next year.

To encourage competition, the CMT has lowered the reference price for the interconnection fees that new operators will negotiate for the use of lines owned by Telefónica, the former monopoly operator. The reduction of up to 30 per cent in existing fees came into operation yesterday, but Telefónica said it would contest this in court.

Uni2 will compete with Retevisión, a carrier launched by Telecom Italia in January as Spain's second fixed-line provider, as well as with Telefónica. It plans to invest Pta207bn ($1.4bn) over the next 10 years in order to gain 7.5 per cent of the domestic market by 2008.

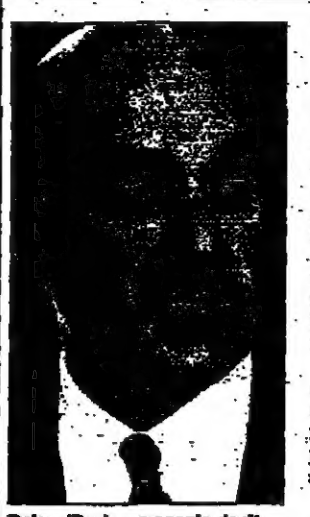
The new operator, which is 69 per cent owned by France Telecom, was the sole bidder in May for the third fixed-telephony licence awarded by the government in the run-up to deregulation. It was beaten by Retevisión in its attempt to gain the third mobile licence, awarded in June.

The government plans to dispose of its 30 per cent stake in Retevisión through an industrial sale before year-end, and Retevisión will begin to offer cellphone services in January. Uni2 now hopes to enter Spain's cellular market using new mobile systems that have still to be approved by the European Union.

The Spanish telecom market represents one of the brightest investment opportunities in the EU. There are some 40 telephones per 100 inhabitants against the European average of over 50 and the number of mobile phone users is forecast to grow from 4m to 10m over the next three years.

Airtel accounts for 30 per cent of domestic cellular business, and Retevisión has some 8 per cent of the long distance calls market.

US warns on southern Africa barriers



Daley: 'Business people don't want to buy into the old Africa'

By Victor Mallet in Cape Town

William Daley, US commerce secretary, yesterday warned southern Africa that increased foreign investment depended on the abolition of trade barriers within the region and the creation of bigger and more attractive markets.

Mr Daley is touring the continent with US business executives and seeking to revive the administration's policy of promoting trade and investment with Africa.

A US official yesterday said President Bill Clinton remained committed to passage of the Africa Growth and Opportunity Act, aimed at increasing trade between the US and Africa. The legislation died in October when it becoming ame encumbered with other items.

"For Africa to be on a global stage, it cannot be small, disconnected markets. It must be regional markets," said Mr Daley. "In this part of the continent, companies want to look beyond the 40m people of South Africa," he told a conference organised by the International Herald Tribune. "They want to look to the 150m people of the SADC [Southern African Development Community] region. So, I believe you need to reduce the trade barriers with your neighbours."

Mr Daley noted that intra-African commerce, at 13 per cent of total African trade, remained exceptionally low, and he criticised the slow pace of trade liberalisation following an agreement two years ago to make the 14-nation SADC a free trade zone by 2004.

Businessmen and government officials from Botswana, one of South Africa's neighbours, suggested that South African protectionism was an obstacle to the free flow of trade. Don Knauss, president of Coca-Cola Southern Africa, said his company was confident it could double its business in the region by 2003, but he complained about South Africa's costly subsidies for its sugar farmers.

Alec Erwin, South African trade and industry minister, retorted that his country had the lowest average tariffs in the region and agreed that a more unified regional market was vital.

Mr Daley did not just insist on the need for regional economic integration. He also said potential investors would be put off by corruption, political instability and lack of intellectual property protection. The latter was a reminder of protests by the US pharmaceutical industry about South African government purchases of cheap generic drugs.

"The fighting in the Congo – the waste of such great human and resource potential – sends the picture to the world of the old Africa, not the new Africa," Mr Daley said. "You and I know that business people don't want to buy into the old Africa."

NEWS DIGEST

NORWEGIAN OIL AND GAS INTERESTS

Statoil begins disposal of stakes in Asian assets

Statoil, the Norwegian state oil company, is closer to pulling out of Thailand after selling its offshore Bongkot field interests in a deal understood to be worth several hundred million dollars.

The company said yesterday it sold a 10 per cent stake in the 5,000bn cubic feet gas field to its licence partners, Petroleum Authority of Thailand (PTT), the state oil company, Total, the French oil company, and British Gas of the UK. The three partners hold 40 per cent, 30 per cent and 20 per cent respectively.

The deal marks the first and largest of three planned Statoil sell-offs in the region to concentrate on other international areas. The company's international activities will focus on the 4bn barrel oil fields in Azerbaijan and the deepwater finds in offshore Angola, as well as Vietnam, the UK, the Gulf of Mexico and Brazil, said Johan Nic Vold, executive vice-president of Statoil.

Statoil expects to conclude shortly the sale of its 45 per cent stake in the 500bn cubic feet gas field in offshore Thailand and its 20 per cent share in deepwater exploration blocks in the Andaman Sea, west of Thailand. Unocal Petroleum and Mitsui Oil Exploration own the remaining 55 per cent in the offshore block, while Unocal and Total hold a 46.7 per cent and 33.3 per cent stake in the Andaman sea blocks.

Statoil also plans by the end of this year to pull out formally from the Namibian shelf, where it holds a share in an exploration licence in south-west Africa. Statoil has drilled three dry wells there, together with Saga Petroleum and Norsk Hydro, the two other Norwegian oil companies.
Valeria Sköld, Oslo

SEA TRANSPORT

First containers at Omani port

The southern Omani port of Raysut, 1,000km south of Muscat, yesterday began commercial operations with the arrival of two container ships owned by Sealand of the US and Maersk of Denmark.

Both companies have a 15 per cent interest in the new port's management company, Salalah Port Services. Between them they operate about a third of the container fleet in the region.

The $260m container terminal expects about 26 ships to dock there this month and plans to target traffic to the Indian sub-continent, east Africa and the Middle East.
Maurice Gent, London

INDIAN TRADE

High tariffs come under fire

India is at risk of hampering exports and raising domestic prices because of its high import tariffs, which are among the highest in the world, the World Trade Organisation's deputy director-general, Anwarul Hoda, said yesterday.

Although he praised the liberalisation of India's trade and industrial policy over the past decade, he said there was still some distance to go.

Mr Hoda compared Indian tariff levels for five categories of industrial goods with those of selected developing and industrialised countries to paint a picture of tariff protection in India. In industrial products the simple average tariff for India was 35 per cent, almost three times that of Argentina and Brazil, and more than six times that of the European Union and the US. He said the percentage of tariff lines having duties above 35 per cent was almost 40 for India against zero to two for other countries.

The figures used were based on tariffs prevailing before India's 1998-99 budget, which introduced a special extra customs duty of 4 per cent. **International Staff**

INDEPENDENCE 'DANGEROUS' IDEAS FOR EMBASSIES SCORNED

Minister warns of Scottish 'delusions'

By James Buxton in Edinburgh

Anyone who believed Scotland would benefit by cutting itself out of the UK's diplomatic and trade assistance network was "seriously and dangerously deluded", Brian Wilson, the trade minister, said last night.

His comments came in a powerful attack on the Scottish National party and its hope for Scottish independence. Mr Wilson, a former minister for Scottish industry, said the UK's trade promotion network was the widest and most effective in the world.

"What possible benefit could there be to Scotland in tearing that arrangement asunder in order to have the satisfaction of opening a Scottish embassy in a Tokyo side street?" he said.

But Alasdair Morgan, SNP enterprise spokesman, countered by publishing letters from the British and Irish Republic embassies in Vienna in response to an SNP supporter's request for information. "The British embassy is streets behind the Irish embassy in the same country," he said.

Mr Wilson told a Scottish audience in London that Scottish embassies and business agencies would be in head-to-head competition with the UK for trade and foreign investment. "There are, I suppose, plenty of people in Scotland who would be delighted to have 50 diplomatic posts flying the St Andrews cross [the Scottish flag] without worrying too much about the implications for Scottish businesses and individuals in the 150 countries in which we would thereby have denied ourselves direct representation.

"That is not an argument which I can easily engage in because, frankly, I do not regard it as rational. The idea that Scotland should cut itself off from this network is just plain crazy."

Mr Wilson, a Scot, is the latest minister to attack the idea of an independent Scotland. Some Scottish Labour MPs have criticised the tactic in the wake of Labour's poor showing in last week's North East Scotland European parliament by-election.

Brian Wilson: nationalist proposals are 'plain crazy' Brendan Corr

"Any attempt to discuss serious issues, and the implications for Scotland, is now met with the cat-call that this constitutes 'Nat-bashing'," he said. "However, the vital debate about the prospects for hundreds of thousands of Scottish jobs cannot be suppressed by cat-calls."

He said the idea that Scotland could become independent "without enormous implications for business and for jobs is simply a naive avoidance of the realities I want to see addressed".

Former Barings directors to be banned

By John Mason, Law Courts Correspondent

Three former directors of the collapsed Barings Bank are to be disqualified from acting as company directors after a High Court judge yesterday ruled they displayed "such a degree of incompetence" they should not be involved in company management.

Andrew Tuckey, former deputy chairman, Ronald Baker and Anthony Gamby now face a further hearing to decide the length of their disqualification. Barings, the London merchant bank, collapsed in February 1995 after Nick Leeson, a Singapore-based derivatives trader, ran up losses that eventually cost the bank £927m and forced its collapse.

Mr Justice Jonathan Parker, the judge, heard disqualification applications brought by the UK government's Department of Trade and Industry in May this year. The three men were accused by the DTI of "serious failures of management in relation to Leeson's activities, thereby demonstrating incompetence of such a high degree as to justify a disqualification order".

The judge said that Barings paid 50 per cent of group profits into a bonus pool for directors and senior employees. Mr Tuckey received a salary of not less than £225,000 a year with a £1.75m bonus in 1993 and a proposed bonus of £1.65m in 1994. Mr Baker, who headed Mr Leeson's division, earned £100,000 a year and was paid a bonus of £900,000 in 1993 with a further £880,000 proposed in 1994. The proposed 1994 bonuses were not paid because of the collapse.

The judge said Mr Tuckey's breach of duty stemmed from a "fundamental misconception as to the extent of his management responsibility". "Had he performed his management duties properly, Mr Leeson's unauthorised activities would almost certainly have come to light and the collapse of Barings might have been avoided," he said.

Mr Baker had shown an "almost cavalier attitude" to Mr Leeson's activities and bore a heavy responsibility for the Barings collapse, he said. Again, had he performed his duties properly, then the trader's activities would have come to light and the collapse of the bank avoided.

Mr Gamby, head of settlements, displayed a "culpable inactivity" in allowing Mr Leeson to run up such debts and was partially to blame for failing to expose the trader's activities, the judge said.

The three men face periods of disqualification of up to 15 years. Other former Barings directors have already been disqualified for periods of up to five years.

The case continues.

Interest rate policy 'takes account of jobs level'

By Robert Chote, Economics Editor

The Bank of England pays close attention to unemployment when setting interest rates, even though it is not an explicit part of its objectives, a senior official from the UK central bank said yesterday.

Mervyn King, deputy governor responsible for monetary stability, said in a speech last night that the monetary policy objectives need not include explicit reference to joblessness. The Trades Union Congress has argued that it should and Oskar Lafontaine, German finance minister, has urged its inclusion for the putative eurozone.

Advocates of an employment objective point to the US Federal Reserve, which is charged to pursue "the goals of maximum employment, stable prices and moderate long-term interest rates".

But Mr King argued that the Fed did not in practice behave differently from the UK Bank. "Under Alan Greenspan's leadership, the Federal Open Markets Committee has firmly rejected the notion that by accepting a somewhat higher rate of inflation it is possible to achieve a permanently higher level of employment," he said.

But the Bank does what it can to minimise undesirable volatility of output and employment, said Mr King. It does so by bringing inflation back to its target gradually if it strays.

Unemployment is an important input into the Bank's policy-making process but concepts such as the "natural rate of unemployment" and the "non-accelerating inflation rate of unemployment" (Nairu) are of limited value as practical guides, Mr King said.

The natural rate is the level of unemployment consistent in the long-term with stable inflation. It depends on the structural characteristics of labour and product markets, for example the level of the minimum wage. The Nairu is the unemployment rate at which there is no immediate pressure for a change in the inflation rate, reflecting inertia in the way the economy adjusts.

Mr King said knowledge of the natural rate was not sufficient to predict inflation. Estimates of the Nairu are in turn by-products of the inflation forecasting process, rather than an input into it. Neither can provide a meaningful target. Policymakers should, however, be more concerned by the levels of output and employment than their growth rates.

Mr King also rejected accusations that the Bank had paid too much attention to the now-discredited official estimates of average earnings growth.

He also downplayed the idea that 4.5 per cent was a "magic threshold" between acceptable and unacceptable rates of earnings growth.

NEWS DIGEST

PRIVATISED UTILITIES

Biggest water group urges easing of takeover rules

Britain's biggest water company has asked the government to clear the way for a wave of takeovers in the industry. Bill Alexander, chief executive of Thames Water, says consumers would be better served if the current 10 water and sewerage companies were whittled down to a smaller number of UK-owned businesses. The company is to press John Prescott, deputy prime minister, to consider changes to the industry's regulatory regime to make it easier for UK water companies to take over rivals. Mr Alexander believes the water industry would be more robust – and better equipped to invest in projects worldwide – if it slimmed down to a handful of companies.

"We would be happy to work with the government on how legislation might be brought forward," he said. Under the 1991 Water Industries Act, all mergers between big water companies are automatically referred to the Monopolies and Mergers Commission. The referral gives overseas companies – notably from the US and France – the chance to make a rival bid.

Thames has invested in a number of international projects, including schemes in Puerto Rico and China, but is getting restless at its inability to expand at home. Mr Alexander said he hoped Mr Prescott would adopt a "pragmatic" approach which would allow rationalisation in the industry. "We believe the UK would be better served by a possibly smaller number of robust, competitive and UK-owned companies, than by 10 vulnerable or actually foreign-owned companies," he said. **George Parker, London**

IMMIGRATION

Controls to be speeded up

Visitors to the UK would experience fewer delays at immigration control under plans from the British Tourist Authority and Immigration Service to co-operate on speeding up the system. The BTA said most visitors were entitled or qualified to be in the country and delays should be kept to a minimum. The memorandum of understanding, jointly published yesterday by the two government agencies, gave no timeframe for implementation but said that increased co-operation would lead to greater efficiency. The UK attracted 25.5m visitors from overseas last year, according to official figures, a 28 per cent increase on 1993. **Elizabeth Robinson, London**

TECHNOLOGY

US group boosts Scotland plant

SMART Modular Technologies, a designer of memory cards and embedded computers based in Fremont, California, yesterday announced an expansion at its European manufacturing headquarters in East Kilbride, central Scotland. The workforce at the plant, opened two years ago, will increase from 250 to 370 over three years.

THE ECONOMY

Factories faces 'bloodbath'

The UK manufacturing sector faces "a bloodbath" if current trends continue, according to the latest monthly survey of the industry. Manufacturers reported falls in levels of output, orders and the price of goods they produce, to record lows in November. The Chartered Institute of Purchasing Managers, which compiled the index of more than 300 manufacturing companies, said the sector contracted at its fastest rate for seven years. "What is really depressing is that domestic demand is so weak," said Peter Thomson, the institute's director. The overall index fell for the eighth consecutive month in November to 41.1 compared with 41.4 in October.

An index reading below 50 implies the sector is shrinking. The reading is the lowest since January 1992, when the survey began. **Richard Adams, London**

CORPORATE GOVERNANCE

Vote recommendation snubbed

Nearly half of the UK's 350 biggest companies are failing to comply with recommendations on voting disclosure set out in the Hampel report on corporate governance this year, Pensions Investment Research Consultants reported yesterday. Pirc found that 172 companies – 49 per cent – failed to disclose the results of their proxy votes at this year's round of annual meetings. The report from the committee headed by Sir Ronald Hampel, chairman of ICI, recommended that companies should provide voting figures when asked by shareholders.

Under the current system proxy votes, lodged mainly by institutional investors, are disclosed only in the rare event of a shareholder poll. **Jane Martinson, London**

هكذا من الأصل

BCCI staff claim careers have been stigmatised

By John Mason and Jim Kelly

London's High Court will today consider whether employees tainted by corporate disasters can sue their former employers when the stigma stops them getting a new job.

The case could make legal history.

Former employees of the collapsed Bank of Credit and Commerce International claim compensation for damage to their careers caused by the stigma of BCCI's notorious failure.

A High Court judge will begin deciding in a number of test cases whether the former bank staff are entitled to damages given the bank's conduct before its $13bn collapse in 1991 – the result of the world's biggest banking fraud.

The case is important because a precedent could be set if the employees won.

Some 650 former BCCI employees claim they have been unable to find financial services jobs.

The claims come in a batch of 1,400 from employees estimated to total between $400m and $500m. The liquidators of BCCI – Deloitte & Touche – have set aside recoveries to meet a proportion of such actions. The alleged stigma-related cases represent most of the potential damages if awarded.

The employees are claiming damages on the basis that the bank's conduct breached an implied contractual obligation of mutual trust and confidence.

The key part of the case may turn on what kind of management behaviour can be seen as breaching such a contract. Their case was upheld last July by the House of Lords, the upper chamber of parliament which acts as the highest UK appeal court, which ruled that such a breach was possible in law.

But it warned that in practice it would be difficult to establish if such a breach had occurred.

However, the case is regarded as important because the Lords' ruling gives employees a separate right to damages flowing from a breach of this trust even if their employment is legally ended. It overturned precedent limiting damages to the notice period – a precedent set in 1909.

Some lawyers consider this could possibly lead to stigma cases being brought against employers in other cases, such as when a company attracts notoriety for selling a dangerous product or even for straightforward bad management.

The cases related to BCCI are part of the complex network of more than 1,000 legal actions which have so far taken place since the collapse of the bank. Many of those taking action in the present case had loans with BCCI and face claims themselves from the liquidators.

Former minister defends role in BSE crisis

PA News Reporter in London

William Waldegrave yesterday strongly denied that the previous Conservative government underplayed the dangers of BSE to human health in order to protect the farming industry. Mr Waldegrave was chief health minister in the early 1990s and agriculture minister in 1994 and 1995.

Public health was always the "paramount concern" of both departments while he was in charge, he told the inquiry into BSE, or "mad cow disease".

Mr Waldegrave said that, while he was agriculture minister, food safety always took priority over the interests of the farming industry, and it was wrong to see the two as mutually opposed. "It always seemed to me that there was a false dichotomy of saying that there was human health on the one side and the interests of the industry on the other.

"If there was the slightest question – as the world has now seen – over the safety of British food, it was a catastrophe for the industry. It seemed to me that by far the best way of protecting the industry was to be tough on public health issues."

The public and media demanded simple and clear answers on whether eating beef was safe, while the scientists' advice was not as clear cut, he said.

Mr Waldegrave said he always encouraged his scientific advisers to look into "dissident" theories proposed by researchers critical of the official line.

He said ministers were initially confident the best scientific advice was that there was no link between BSE and the human disease CJD, and the news that there was a link in 1996 came as a "thunderbolt". He told the inquiry: "This was the biggest emergency of my political career."

MANUFACTURING BEATING THE TREND

Exporter takes seat at Boeing's top table

By Peter Marsh

Despite the continuing flow of gloomy data and difficult trading conditions, manufacturing success stories can still be found.

Boeing of the US, the world's biggest aircraft maker, buys all its pilot seats from Ipeco, an English company that recently spent $2m developing seats for Boeing's 757-series.

Ipeco has expanded its total sales from £20m ($33m) in 1996 to an expected £28m this year – largely on the back of orders from the US company, which account for 60 per cent of Ipeco's turnover. It is predicting another 10 per cent total sales growth in 1999.

Ipeco is dependent on US exports and has been protected from the effects of sterling's rise by its market position. "Inevitably the strength of the pound has affected margins. But we've been able to live with it by expanding our currency hedging activities and through gaining greater economies through increasing our output as Boeing has expanded its build rate in the past few years," says Steve Johnson, an Ipeco director whose family owns the company.

Ipeco, then named Industrial Precision Equipment, was founded in 1961 by Allan Johnson, Steve's grandfather, as a subcontractor to aerospace and defence companies. It moved into pilot seats in the 1970s after UK government research into pilot stress. "After my grandfather designed one of the early seats he took it home to spend the weekend on it watching TV to discover how comfortable it really was," says Steve Johnson, whose father, Chris, is Ipeco's managing director.

The company's big break was in persuading Lufthansa, the German airline, to specify Ipeco seats in the mid 1970s, after which orders from Boeing started to roll in.

But the company has to invest heavily to ensure that its designs meet increasingly strict aerospace standards.

"The dilemma for us is how to enhance comfort, enhance safety and reduce weight and costs, all at the same time," says Steve Johnson. One long-term concern for Ipeco is its dependence on Boeing. It is trying to reduce this through efforts to supply other manufacturers, including Airbus, the European consortium that is the US company's main rival, with seats for flight attendants – somewhat lower-tech versions of pilot seats.

The company has also expanded into a variety of products, unrelated to aircraft seats, which account for 30 per cent of sales and include equipment for aircraft galleys and specialist space satellite hardware for customers such as GEC-Marconi.

Family seat: Steve Johnson, whose grandfather found Ipeco, says the strength of the pound has affected margins David Ahmed

Chemicals company finds solution to business equation

The fortunes of CP Pharmaceuticals prompt the big question: if the outlook is so grim, why can success stories be found? **Peter Marsh** reports

While many UK manufacturers scramble for orders in a colder economic climate, Charles Savage has to be careful not to overload his plant by taking on too much work.

Mr Savage, chief executive of CP Pharmaceuticals, a fast-growing chemicals concern, illustrates a puzzle at the heart of British business. If the manufacturing outlook is so poor, why is it relatively easy to find examples of manufacturers increasing their output?

Those doing well, even in export markets hit by the high pound, include those that have latched on to outsourcing, in which bigger enterprises hand over parts of their production to outside businesses. A second group encompasses those using specialist design or technical skills to meet demand in a global or regional niche.

CP, based in north Wales, benefits from outsourcing. Mr Savage, a former consultant, is a main shareholder and is looking to make a public offering in the next few years. Sales are expected to grow from £34m ($40m) last year to about £38m this year.

CP makes "generic" or off-patent drugs and other products sold to the state health service but the key to its growth is contract manufacturing for bigger companies.

The big pharmaceuticals groups increasingly spin out activities – on the grounds of cost and flexibility – to specialist concerns rather than make all their products themselves.

Another trend benefiting CP has been the growth in "virtual" drugs groups that concentrate on research and marketing, leaving all their manufacturing to outsiders. About a third of CP's turnover comes from such contracts.

Outsourcing also helps Moyola Precision Engineering, in Castledawson, Northern Ireland, which makes parts for industries including aerospace, lift-trucks, medical equipment and chemicals.

It had sales of £1.6m last year, nearly a third exported, and aims to push the figure to about £1.9m this year. It is considering doubling its factory space and increasing its 40-strong workforce by 15 per cent.

The 25-year-old privately-owned company invests heavily in machinery and spends more than £100,000 a year on training.

In recent years Moyola has increased sales by an average of 25 per cent a year. "We work in a number of markets; if one goes down the chances are the others will be going up," says Mark Semple, whose father Ray owns the company and whose mother and sister also work there.

"You can't make cheap clothing efficiently in the UK so it is best to go for the more expensive alternative," says Mr Markham. "We are among the UK manufacturing companies which have benefited from the strong pound because we buy cloth from overseas, and this has cut our costs as sterling has risen."

Filtronic, based in the northern England city of Leeds, has grown on the basis of ideas in the field of high technology. The company is a leading maker of microwave devices used in mobile telecommunications and electronic warfare. Filtronic is publicly quoted, has annual sales of about £220m and 2,500 employees, of which about one-third are in the UK and the remainder mainly in the US, Australia and Finland.

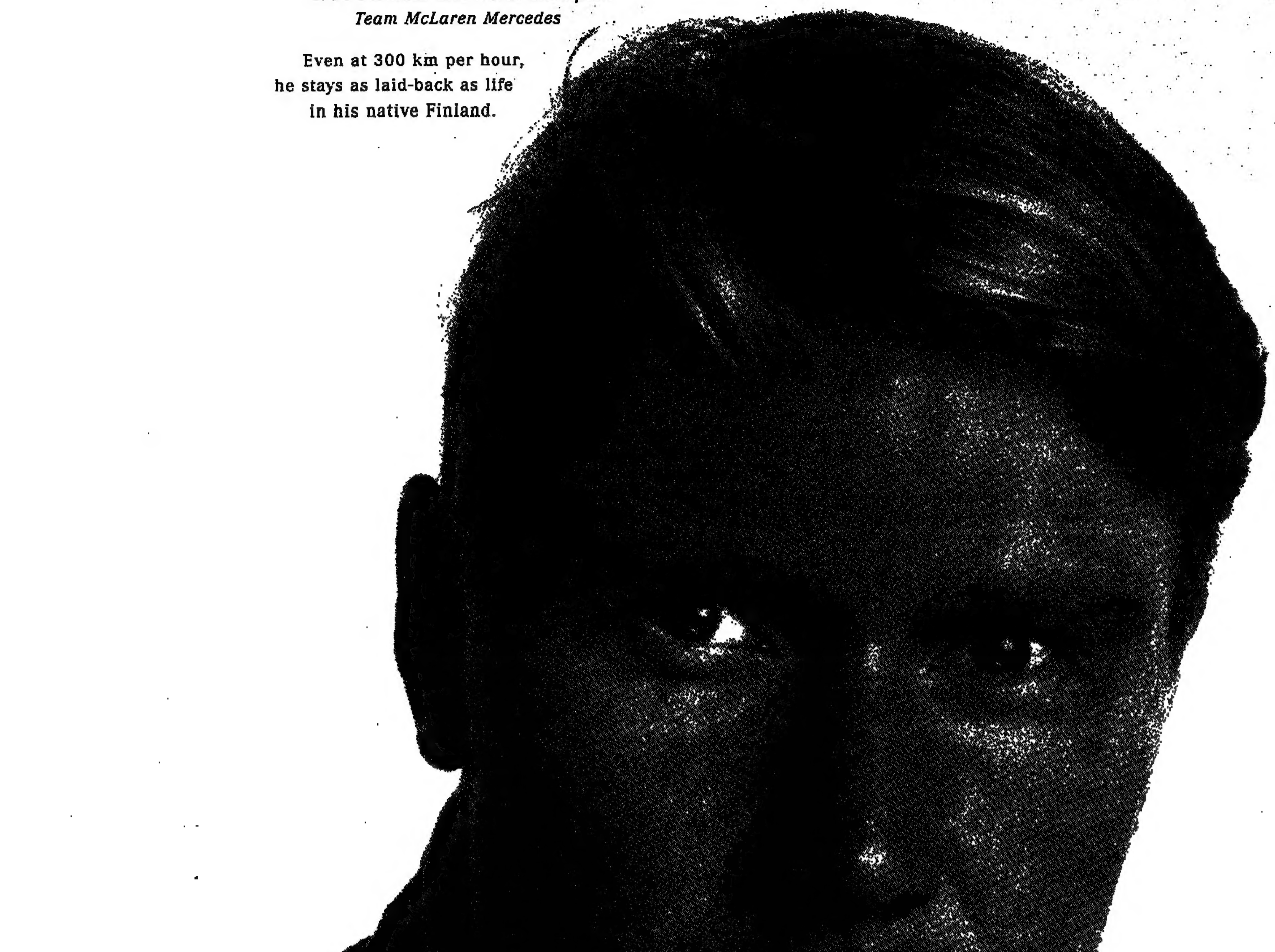
The company's equipment fits inside base stations that channel signals to and from telephone handsets and connect them to the rest of the network.

David Rhodes, a former Leeds University professor and Filtronic's founder and chairman, expects group sales to expand by 35 per cent over the next few years. "We are limited mainly by our ability to employ suitably qualified staff," he says.

CONTRACTS & TENDERS

Mika Häkkinen
1998 Formula One World Champion
Team McLaren Mercedes

Even at 300 km per hour,
he stays as laid-back as life
in his native Finland.



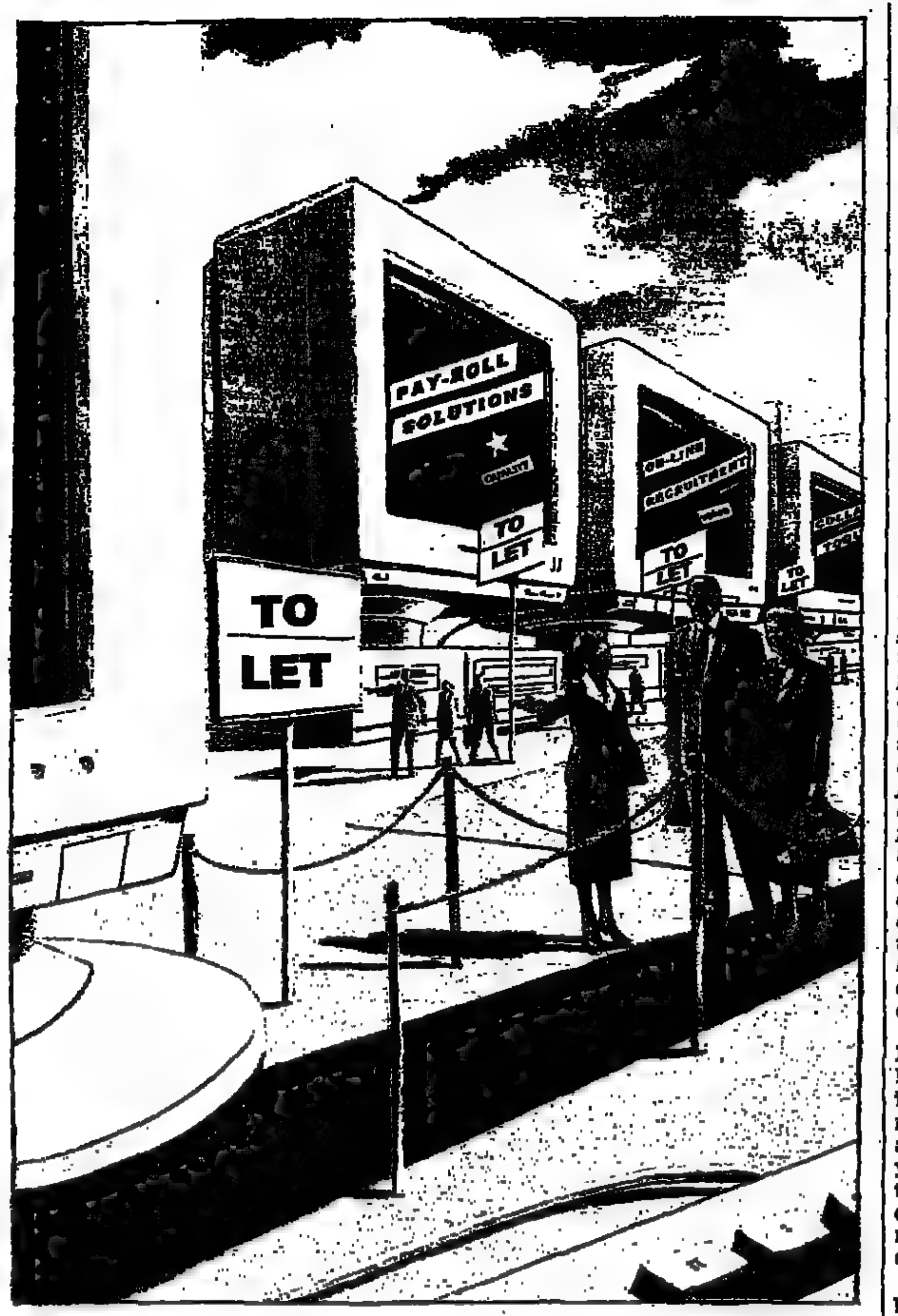
Courage meets C

Can you imagine two companies, synonymous with bold thinking, taking the most daring step of all as a team? We can. Because the courageous people who led the development of a navigational system that guides drivers as if by magic are now together wi the people who designed a proving ground where vehicles can I tested on roads too extreme for even the toughest human driver. Tl

IT OUTSOURCING APPLICATIONS HOSTING

Welcome to the era of 'Rent an App'

Outsourcing's next step lets companies keep complete control of data, says **Richard Poynder**



Eighteen months ago, Larry Koskinen concluded that the only way to improve his company's sprawling computer system was to rip everything out and start again.

But, as chief information officer at Development Alternatives (DAI), a US-based economic development consultancy, he realised this would mean closing down the Lotus Notes infrastructure on which the company's e-mail system, as well as a host of shared databases, was built. With 300 staff spread throughout 60 countries the communications blackout would have meant commercial suicide.

His solution was to recruit the services of Interliant, a small Texas-based company specialising in a form of outsourcing known as application hosting. "Effectively, we rented a Lotus Notes server based in Interliant's Houston office and had them replicate all our messaging data, as well as our Notes databases," says Mr Koskinen.

Connected to Interliant's international network, this allowed DAI's employees worldwide to dial directly into the rented system as though it were still housed on DAI's computers.

Mr Koskinen was so impressed he decided to use Interliant's services permanently. "From a total cost-of-ownership standpoint, it made more sense to continue using Interliant than to take it back in-house," he says. "Just to offer the 24-hour telephone support provided by Interliant would have needed three shifts of people. It also meant someone else took responsibility for upgrades and maintenance."

Benefits like this have made application hosting a hot topic. And with a growing number of service providers, including network operators such as Deutsche Telekom and IBM Global Services, internet service providers such as UUNET and Netcom, as well as new-style providers such as Interliant, there is no shortage of suppliers.

So, how does application hosting differ from traditional outsourcing? For a start, says Nancy Faigen, vice-president of e-business solutions at IBM Global Services, it enables companies to maintain total control of their data. "By outsourcing the application you still have your own system, but somebody else manages the software, the physical information and databases, and the network connections," she explains. "By using the internet you can utilise a very low-cost, very pervasive mechanism for delivering that application."

It also offers benefits to small- and medium-sized enterprises (SMEs), says Hartmut Wittig, head of corporate strategy at Deutsche Telekom Computer Service Management. "Smaller companies often find themselves having to hire a full-time employee to manage a system that only requires a quarter of an employee to operate. Application hosting avoids this problem."

Large companies also benefit, says Jim Lidestri, Interliant's chief executive. "For larger companies the issue is time to market: we can roll something out in days or weeks that might take someone else six months."

For Zurich-based Swiss Reinsurance Company it was a question of making the best use of internal resources. "We wanted to be sure that we would have the capability to communicate with all our vendors, partners and customers via our Lotus Notes system," says Friedrich Straker, head of global Notes network organisation at Swiss Reinsurance. "This meant setting up and operating separate gateways to the internet, X400 [messaging] systems, and various host-based mailing systems. For this you need very specialised skills, so we didn't want to mess with it."

Instead, Swiss Reinsurance rented a Notes server from Interliant. This acted as a gateway to the world, with Interliant doing the necessary gateway work.

Lotus Notes was a test bed for application hosting; now it is only one of an increasing number of applications that may be rented. In August, IBM formed a partnership with ADP, a US-based computing services company, to offer a new internet-based payroll solution for small businesses called EasyPayNet.

> 'By using the internet you can utilise a very low-cost, very pervasive mechanism for delivering'

Developed by ADP and hosted by IBM, EasyPayNet provides a secure online payroll processing, tax filing, benefits administration and human resource information management solution.

"Small businesses wanting to set up a payroll application now have two choices," says Ms Faigen. "They can acquire the necessary software and equipment and run it themselves or they can get the same capability from a provider like ADP. Instead of logging on to their internal system to get their processed data, they connect to the provider's system across the net."

The success of application hosting will depend on companies' willingness to outsource critical applications; in particular, the Enterprise Resource Planning (ERP) software increasingly being used to integrate financial, human resource and manufacturing processes within companies.

Tom Gormley, an analyst at Forrester Research, suspects that the growing complexity of ERP systems offers companies little choice. "Over the past five years around $100bn has been spent on ERP software," he says. "This has been done on the basis that outside experts come in to help implement the software, and then leave the company to manage on its own. But many companies are getting the jitters halfway through the implementation: they realise they can't manage these very complex applications alone."

Mr Gormley expects this will lead to companies renting their ERP software, initially over private networks, eventually over the internet. "They will do so because the economics will be overwhelming," he says, predicting that the applications rental market will grow from a pittance to $6bn by 2001.

Groupware and collaboration tools remain the fastest-growing sector today, however. In September Interliant took the process further, launching online "rent an app" products. With prices starting at $14.95 a user per month, it is possible to rent applications on an ad hoc basis over the web by credit card. That includes a Year 2000 compliance package, an online recruitment application, and a collaboration tool, developed by Lotus, called Instant Teamroom.

DAI uses Instant Teamroom to manage projects, assembling teams of consultants in virtual conference rooms on the web. "If you think about it, when you have your annual conference you don't buy the hotel, you rent the hall," he says.

JOHN W. HUNT
ADVISES

Those that can, teach leadership

Management development is a growth industry, but our approach to developing leaders should be more realistic

Dear Professor Hunt,
I recently joined a large global organisation. One of its attractions was the promise to invest in my development and I have been on several leadership modules run by outside consultants. I must admit to feeling daunted by what is demanded for top leadership positions and have been thinking about changing tack altogether. Management development itself seems to be a huge business; I am now wondering if it is this field that someone like me in my early 30s should look to for a career.

Prof Hunt replies:
If you want a business to get into, the development of managers is a winner. Look at any study of the past five years or the predictions of the next five and the only conclusion to draw is that management development is a growth industry.

Training Magazine, a US publication, recently reported that US companies spent an estimated $58.6bn (£35.4bn) on employee training and development in 1996. While comparable figures for Europe are not easy to find, and allowing for the fact that there are wide variations between countries, anyone involved in this business will tell you it is booming.

Globalisation, the march of technology, company restructuring, the rise of performance assessment – all have contributed in some way to the main driver: the search for leaders who can manage successfully in this complex and ever-changing business environment.

It is hardly surprising that you feel daunted. By definition, effective leaders are unusual. Mass production of unusual people is a contradiction in terms. And the more studies there are on the subject of "leadership" competencies, the more unlikely it is that we will find what researchers tell us we need.

The list of cognitive, interpersonal, analytical and presentational skills now deemed essential for business leadership, almost regardless of level, would deter all but the most determined and gifted individuals.

There is not even a lot of evidence that those chief executives who possess this *formidable armoury of skills* are more likely to run effective businesses. That is why, in recent years, there has been a welcome move to show more interest in the characteristics of the top team rather than the chief executive alone. After all, no man or woman runs a business in isolation. And slowly, research is showing that the performance of top teams that can collectively demonstrate some of these skills bears more than a passing relationship with the performance of the firm. In which case management development should focus less on the individual and more on the leader and his or her team.

This is a healthy move and ties in with my own view that our ambitions for developing leaders should be more realistic. If we continue to confront young people with god-like lists of what is expected of them, then we are certain to fail to find or develop them.

We should not be surprised if fewer and fewer young men and women will see their future in global organisations where the expectations of their interpersonal or leadership skills are grossly overblown. Why should they bother? Why tolerate this humiliation when running a small consultancy two or three days a week in the booming management development industry could provide more fun, more freedom, as much or more wealth and – importantly – realistic expectations of what they might achieve.

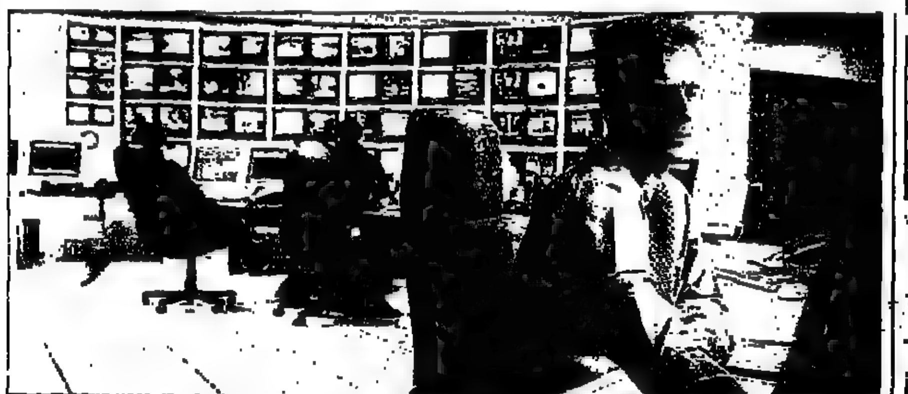
Should you get into this business yourself? Given that it is still the prevailing view that management development is the way to produce these stars, it comes as no surprise to find that companies are willing to invest hugely in that activity. Some figures suggest that in the US the market for in-company programmes will increase by 65 per cent during the next five years. So there is certainly room for you if you are really interested.

Take a broad view, do not confuse development with courses. The idea of a programme, modular or not, as the best means of delivery is increasingly being questioned. Taskforce membership, job rotation, overseas appointments, on-the-job learning and distance learning all now feature prominently in modern development delivery.

Several factors have influenced this shift. First, it is clear that typical classroom teaching may not be the most effective way to learn many of the admired business skills. Second, while the demand for training has increased, the number of trainers (whether corporate staff, business school faculty, or external consulting firms) who can deliver a quality learning experience has not increased in parallel.

While management development is a lucrative goal to pursue, effective developers are at a premium. So before you leap onto this bandwagon, practise on your company's programmes. Find out if you have the skills needed to succeed in this game. There is little joy in being second-rate at your job but, for some reason, to be a second-rate consultant in management development is very sad indeed.

John W. Hunt is Professor of Organisational Behaviour at London Business School and a consultant to private and public sector clients. This column appears fortnightly.



Eutelsat control centre in Paris: curbing costs for broadcasting — Eutelsat

TECHNOLOGY SATELLITES

Watch this space

George Cole on a system that can reduce broadcasting costs by combining digital data streams above the earth

A new satellite technology could greatly reduce the cost of distributing digital television programmes, data, multimedia and internet content over Europe and parts of the Middle East.

The Skyplex system has been developed by Eutelsat, the European Telecommunications Satellite Organisation, and the European Space Agency, and built by Alenia Aerospazio, an Italian technology company.

Skyplex makes it possible to combine or "multiplex" a variety of data streams on board a satellite and then distribute them over a wide area as a single data stream. Data multiplexing is normally carried out on the ground, with broadcasters or data content providers sending their data to a multiplexing site.

After being multiplexed, the data stream is sent to a satellite (uplinked) and then transmitted back to earth (downlinked) to be received by a satellite dish. The dish may be connected to a television, PC or business television system.

The conventional multiplexing system works, but television or data broadcasters must send their data via fibre-optic link or microwave transmission. This can be expensive, especially if data is being sent from several sites or even from different countries.

The Skyplex system has been successfully tested by Eutelsat aboard the company's Hot Bird 4 satellite, *positioned in geostationary* orbit over the equator at a longitude of 13 degrees east.

Hot Bird 5, which was launched on October 9 and went into service on November 10, is co-located at the same orbital position, and is the first satellite operating Skyplex on a commercial basis. Hot Bird 5 contains three Skyplex units, with two units used for back-up.

Each unit can handle up to eight uplinked data streams, with data speeds of up to 6 megabits per second. Data is downlinked from a Skyplex satellite at speeds of up to *27.5 megabits per second.*

The Skyplex unit multiplexes the data in real time, adds error correction data and then converts it into a format that conforms to the European Digital Video Broadcasting (DVB) standard. More than 70m homes in Europe, the Mediterranean basin and the Middle East receive television channels from Hot Bird satellites.

Giuliano Berretta, Eutelsat's director-general designate, says Skyplex could greatly reduce the uplink costs: "It normally costs around $200,000-$250,000 to *uplink data to a satellite, but* with Skyplex it could be as low as $70,000."

Potential uses for Skyplex technology include the distribution of local or regional programming, thematic channels, business television, data distribution, and as an internet gateway.

"The barriers for using satellite to distribute your programmes, multimedia content or data are coming down," says Mr Berretta.

LOUISE KEHOE
IN SAN FRANCISCO
EAGLE EYE

Playing the internet market

The only way for Europe and Asia to narrow the US lead in the internet economy is to reduce their own telecommunications charges and thus make access easier

International debate about the internet has so far focused primarily on issues such as privacy, encryption and taxes. Yet there is a much broader issue that rarely gets mentioned, which is giving the so-called internet economy of the US a big boost, perhaps at the expense of non-US *participants and certainly to* the detriment of established, "offline" businesses.

The Clinton administration has created, in effect, an "industrial policy" regime that favours US electronic business. Through favourable regulatory and taxation policies, the government has ensured that internet access in the US is cheaper than anywhere in the world. For a $20 flat fee per month, or less, US computer users can dial up the internet for hours at a time, with no telephone charges to add to their costs.

The result? More than 30 per cent of the US population is online compared with less than 15 per cent in the UK, for example.

But the implications of varying internet costs go far beyond *consumer spending.* Lower telecommunications rates also make it cheaper for European electronic merchants to set up their web servers in the US, even if they plan to sell products to customers in their home countries. Steep charges for local telephone calls used to access the internet also discourage the formation of new electronic businesses in Europe and Asia.

The cost advantages of the US are determined to a large degree by regulations that prevent local telephone companies charging access fees to internet service providers that use their telephone networks. This policy may have come about by accident – the result of regulations failing to keep pace with technology changes – but it is now in effect ensuring that internet prices in the US are not aligned with real costs.

In traditional industries, such policies would surely create an outcry among international trading partners. The use of government subsidies, tax favours and other mechanisms to maintain or increase industrial growth has been at the root of many trade battles. Yet so far, the US government's industrial policy towards electronic business has gone largely unchallenged. Can it be that other countries have yet to recognise its effects?

Of course, the best response that other countries could make to the rapid growth of the US internet economy would be to find ways to lower their own local telecoms costs – which in many cases are kept artificially high by market regulation. That is what internet users and businesses should be pushing for.

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Where is your web site? Businesses with "mission critical" web sites – electronic stores, auction houses and the like – as well as those with an "image-critical" internet presence, are turning increasingly to third parties to maintain the computers and communications facilities that keep their web pages purring 24 hours a day, every day.

The trend has made Exodus Communications one of the fastest growing companies in Silicon Valley *during the past year,* and created a new niche in the IT outsourcing services industry.

Exodus's data centre, at the company's Santa Clara headquarters, is like no other I have seen. Fitted with dozens of cages, like a jam-packed zoo, it houses the rack-mounted electronic "beasts" that power hundreds of popular web sites. The cages vary in size, roughly proportional to the volume of traffic on the web site.

At the simplest level, Exodus merely provides a secure building – with multiple back-up communications and power lines – explains Ellen Hancock, Exodus chief executive, as we tour the facility. Yet as electronic *businesses grow, companies* tend to hand over more and more responsibility to the services company to ensure that upgrades and unexpected systems problems are dealt with promptly.

Leading businesses out of the land of tangled networks and miscreant servers is Exodus's mission. A growing portion of the company's clients also host their internal intranets in its cages.

The next step for Exodus will be to offer database hosting services – as part of an initiative by Oracle, the database software company, to enable small and medium businesses to make use of its products.

For Ms Hancock, a veteran of International Business Machines and Apple Computer, it is all suspiciously like the old days when mainframe computer systems became just too complex for a lot of companies to support internally.

Come to think of it, buying access to database management software is reminiscent of the days of timesharing. Could Exodus become the next EDS?

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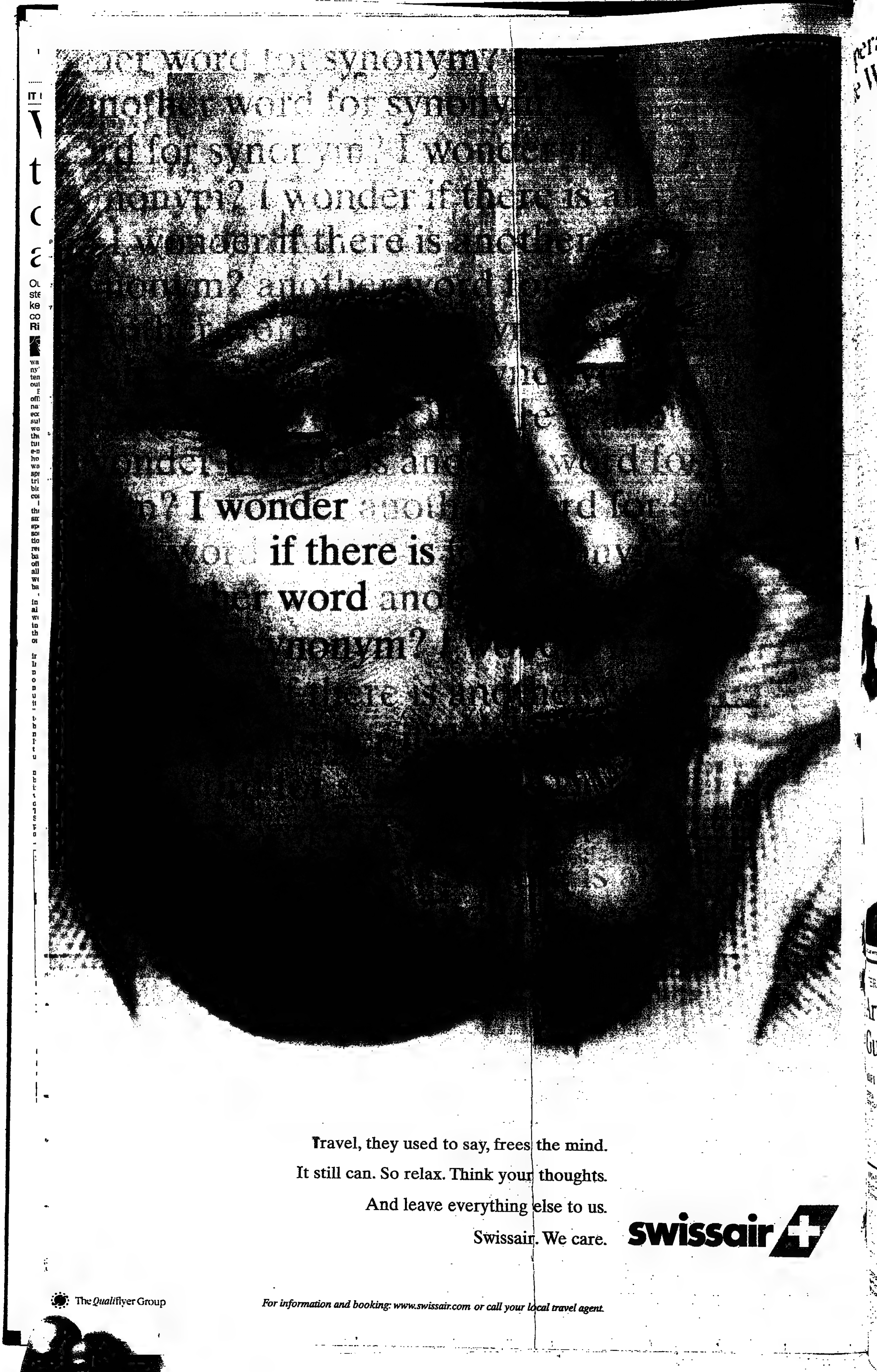
As all good free-marketeers will tell you, messing with market forces is a perilous game. The internet is no exception. Local telephone companies in the US, which have little financial incentive to increase internet traffic on their networks, have failed to invest in creating high bandwidth links to US homes and businesses. ISDN lines, for example, are less widely available in the US than in Europe.

This has created the "last mile" problem, so called because although the trunk lines of telephone networks are capable of carrying high speed signals, connections to homes are typically slow.

Addressing this problem is the aim of Microsoft's partnership with Qualcomm. Together, the software company and the wireless communications technology specialists plan to bypass the phone companies' last-mile chokehold with wireless links.

In other words, market forces are at work. And who better to drive them than the IT industry's most successful capitalist?

Share your views in the Eagle Eye discussion group on the FT web site (www.FT.com) or contact Louise Kehoe by e-mail on lkehoe@ix.netcom.com



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Opera lies moribund on the War Memorial stage

Disastrous casting policies and lack-lustre productions have dogged the San Francisco opera company all season, reports Timothy Pfaff

There's more than one way to lose an opera company. San Francisco Opera now plies its trade in a sumptuously refurbished War Memorial Opera House, but this season – by a margin the most dismal in this observer's 28-year experience – it has become something of a sweatshop. Opera in San Francisco now feels like work on both sides of the curtain. A company that seemed unable to get off the "Streetcar Named Disaster" took until the season's penultimate offering, *Peter Grimes*, to muster a production that looked and sounded as if anyone cared.

The *Grimes* was announced and marketed as a new Christopher Alden staging, but financial constraints prompted the company to resort to its quarter-century-old production, memorably directed on its two previous outings by a distinguished Balstrode, Geraint Evans. While John Copley's revival lacked the coarseness of his other work in San Francisco, it also lacked definition. Principal characters never quite came into focus, with Thomas Moser's gripping protagonist the only stage presence more compelling than – unalloyed Copley here – the borough's miscreant movers.

Deborah Riedel's big-voiced Ellen Orford veered uneasily between naive do-gooder and defiant outcast, and tended to disappear when not singing. Alan Held's squinty Balstrode lacked presence, to say nothing of the moral authority, to order Peter to take his boat out and "sink her". Only Moser, who also delivered the production's only singing of real consequence, seemed inner-directed. Honing in on the character's schizophrenia (artistic, not clinical), he chillingly caught Peter's wild careering between tottering colossus and aspiring speck.

What direction was lacking onstage came abundantly from the pit, where Donald Runnicles, largely back on form this season and here conducting an opera he clearly knows and loves, led with authority. The orchestra and chorus became the important characters they are in *Grimes*, and the opera ultimately exerted its wonted impact.

Runnicles played a similar role in one of the few other moments this season when one simply forgot one was in the theatre: a transporting "Und du wirst mein Gebieter sein" in *Arabella*, with Franz Grundheber's Mandryka joining the entire audience in succumbing to the charms and strengths of Claire Watson's Arabella. It was a moment to be grateful for in a performance otherwise memorable only for Donald McIntyre's indelible Count Waldner.

This was a season in which the audience laughed out loud – although there was only one comic opera

More than a decade ago, Lotfi Mansouri began his tenure as general director with the only promise he was in a position to make: that there would be heightened emphasis on theatrical values. But in a season in which he uncharacteristically directed none of the productions, show after show lay in state on the War Memorial stage while vocal standards dropped to unprecedented lows. This was a season in which audiences laughed out loud – though the only comic opera was a late-season import of the Kirov's *Betrothal in a Monastery*, with Valery Gergiev making his local farewell.

The most devastating laughter greeted the season's only other new production after André Previn's disastrous *A Streetcar Named Desire*: a limp Emilio Sagi staging of *Don Carlo* with insipid postmodern designs by Zack Brown. The cruellest guffaws – though they largely expressed incredulity – targeted Markella Hatziano's vocally inept Eboli. The rest were elicited by an *auto-da-fé* that looked like a Triumphal March gone bad (complete with puppet show), and by Sagi's decision to eliminate the opera's problematic final moment and replace it with action that I'd describe if I had the faintest idea what happened.

Emmanuel Joel's glacially slow tempos did nothing to erase memories of one of Runnicles's great achievements in the house, conducting a 1992 revival of a celebrated *Don Carlos* that didn't warrant replacing. Sergei Larin's sturdy Carlo and Anthony Michaels-Moore's intermittently noble Rodrigo represented the only acceptable singing, offsetting James Morris's malevolent, distended Philip II and Nina Rautio's Elisabeth, which began promisingly but by "Tu che le vanità" devolved into a pathetic Montserrat Caballé impersonation.

Two other productions, both old enough to vote, showcased box-office favourites Ruth Ann Swenson (*Manon*) and Carol Vaness (*Norma*), the former singing creditably if not quite to her accustomed standard. Vaness, flanked by Anna Caterina Antonacci's unreliable Adalgisa, Michael Sylvester's stolid Pollione and Andrea Silvestrelli's woofy Oroveso, sang a petulant, verismo Norma, a vocal disaster on opening night, on the second accurate without a trace of *bel canto* limpidity. Any chance at nobility was countermanded by the decision of the revival director, Andrew Sinclair, to have her slit the throat of a half-naked male human sacrifice during "Casta diva" and collect the blood in a chalice. At least she didn't drink.

A season-opening *Turandot* revived the popular David Hockney production with an inadequate cast headed by Gabriele Schnaut's grotesquely squally Princess. But it was *Tristan und Isolde* (in a revival of an empty Michael Hampe production last sung by Schnaut) that raised a public outcry at the company's casting policies. A week before opening, Karen Huffstodt – who couldn't manage Salome two years ago – was excused and replaced by Elizabeth Connell, whose opening night was reportedly rough. But the second performance she sang ably, and generously, while still a far cry from a credible Isolde. Wolfgang Schmidt lunged desperately at Tristan's notes, missing many of them wildly and clearing the house before Act 3. This was a show Runnicles and Violeta Urmana's fine Brangaene could not save.

There is widespread alarm that Schmidt is the announced Siegfried in the company's *Ring* next summer. But the biggest concern is Mansouri's decision to hire Andrei Serban (for his first *Ring*) to rethink and redirect Nikolaus Lehnhoff's widely admired and internationally imitated production, and Robert Perdziola to "revise" John Conklin's resplendent designs. It's beginning to look like vandalism. Jane Eaglen, singing her first complete Brunnhilde here, will have her work cut out to redeem this crumbling Valhalla.

Thomas Moser's performance as Peter Grimes (above) and Donald Runnicles in the pit were among the few high points of the season

Marty Sohl

MUSIC ELLIOTT CARTER

Laced with wit and wisdom

A splendid Barbican concert in *London on Saturday not only* celebrated Elliott Carter's imminent birthday, but proved that at 90 this remarkable American composer is still a creative force. His new opera – his first – is complete, though it will not be heard until next September, in Berlin.

Meanwhile we had two London premieres to be going on with, and also his Fifth String Quartet. Oliver Knussen conducted the BBC Symphony in Carter's *Symphonia* (as he did at the ISCM festival in Manchester last spring): three opulent movements, respectively athletic, brooding and brilliantly airborne. The composer has added a subtitle: *sum fluxae pretium spei* ("I am the prize of flowing hope"), the closing line of Crashaw's Latin poem about poetry which inspired the work.

The Fifth Quartet (1995) is dedicated to the superb Arditti team who performed it here. Carter has always liked to emphasise the individuality of each voice in his quartets; in no. 5, the six movements proper are linked by "interludes" in which the separate players try out and explore fragmentary ideas from before and after. As intended, we seem at once to be hearing both an illuminating rehearsal *and* a performance. The music is rich in beautiful invention, and Carter's ingenious ruse makes it easier to appreciate immediately.

Ursula Oppens joined the Arditti for the new Piano *Quintet. Her piano is set in* maximal contrast with the strings – initially terse and staccato against their lyrical polyphony, later taking off in puckish virtuoso flights while they are otherwise occupied. When they share material, it is usually at different times: the piano starts a new "movement" while the strings are still developing the last one, or vice versa.

All these complications are under masterly control, and laced with mischievous wit. Carter is incorrigible, and incomparable. The audience for this concert was gratifyingly large and warmly responsive.

★

A few nights earlier Christoph von Dohnányi explored more familiar territory with the Philharmonia (and an even bigger audience) in the Royal Festival Hall: Mahler's Second Symphony, the "Resurrection". It had been awesomely well rehearsed, from the furious string-flourishes at the start to the grand choral peroration (the Bach Choir in lusty form) and off-stage brass in the Finale.

Dohnányi revealed more delicate polyphony in the Andante than one generally hears, and even more whimsical and sinister details in the Scherzo (though it was a notch slow, and therefore slightly tame). The solo singers were Nathalie Stutzmann, whose deep *contralto in "Urlicht" was* earnest and a bit plummy, and the lovely soprano Inger Dam-Jensen.

If there was a price to pay for Dohnányi's comprehensive rigour, it was in the string-tone: the violins sounded so exhaustively drilled that there was no illusion of spontaneity, and in pianissimo passages not much bloom. Still – hugely impressive, and a huge success.

David Murray

A popular winner, if not a cerebral one: Chris Ofili, the odds-on favourite, with some of his brightly decorative work

Sweet smell of success

Chris Ofili wins the Turner Prize, reports Antony Thorncroft

Chris Ofili has won the 1998 Turner Prize, worth £20,000 and tons of prestige. The odds-on favourite was given his cheque by clothes designer Agnès b. at the Tate Gallery in London last night.

It was the first time an artist working mainly with paint has won the Turner since 1985, when it went to Howard Hodgkin: in recent years it has been snapped up by video artists. But Ofili fits neatly into the Turner tradition of sparking off controversy: he invariably adds elephant dung to *his brightly decorative paintings.*

The use of dung is to remind Ofili, who was born in Manchester in 1968, of his African origins: his parents come from Nigeria. It also, with its perceived ugliness, acts as a counter to the almost garish colours he employs in his work, which in recent years has become increasingly figurative.

There is little attempt in his art to avoid his origins. Ofili's paintings have a sunshiney, folksy look, reminiscent of an African street market. His portraits are often familiar black icons, with Afro hairstyles and exuberant poses. But there is also an inner city, urban feel to the work: Ofili is drawn to gangsta rap and likens the imposing of layers of paint on his canvases to the laying down of instruments on a record. In cheeky homage, he is happy to inscribe the names of black rap artists, as well as sportsmen like Clive Lloyd and Frank Bruno, on to the dung which attaches itself remorselessly to his paintings, as well as supporting them off the floor.

Ofili is not a polemical artist; he undercuts his imagery with humour, and is not afraid to use pornography as a source of ideas. He is likely to be the most popular and accessible winner of the Turner for many years, if not the most cerebral.

Ofili fits neatly into the Turner tradition of controversy: he invariably adds elephant dung to his paintings

Ofili, who is attached to the Victoria Miro gallery, studied at Chelsea School of Art and the Royal College of Art in London. His work is bought by Charles Saatchi, and it was included in last year's *Sensation* exhibition at the Royal Academy. "Them Bones", painted in 1995 with acrylic, oil, resin and elephant dung, is on offer at Christie's auction of works from the Saatchi collection next Tuesday, estimated at up to £10,000. It should now sell for more.

The runners up for the Turner, which is sponsored by Channel 4, were the video artist Sam Taylor-Wood, whose work pries into the lives of the chattering classes; the multi-media artist Tacita Dean, who employs her obsession with the sea in work which stretches from videos of lighthouse beams to drawings of waves; *and the sculptor Cathy de* Monchaux, whose compositions, using a sensual mixture of materials, are perhaps the most intriguing.

The work of all four shortlisted artists is on display at the Tate Gallery on Millbank until January 10, 1999. The Turner Prize is much mocked for concentrating on a small coterie of artists working at the cutting edge, for its concern with political correctness and for operating within a small group of gallery owners linked to the Tate Gallery. But the prize is designed to provoke discussion, and to be concerned with new developments in contemporary art. Much of the work is, at the least, interesting, and it certainly attracts a new and younger audience to the gallery.

INTERNATIONAL

Arts Guide

ADELAIDE

OPERA
State Opera of South Australia
The Ring: second cycle of Wagner's opera. Performed in Australia for the first time since 1913. The Ring is conducted by Jeffrey Tate and includes Janis Martin among the cast; to Dec 4

AMSTERDAM

EXHIBITION
Rijksmuseum
Tel: 31-20-673 2121
Shakudo: display of Asiatic objects highly popular in Europe and imported in large quantities by the Dutch East India Company. Mainly they were luxury goods such as sword hilts and tobacco boxes; to Apr 5

OPERA
Netherlands Opera, Het Muziektheater
Tel: 31-20-551 8911
The Queen of Spades: by Tchaikovsky. Conducted by Semyon Bychkov in a new staging by Lev Dodin. An international co-production that will travel to Florence and Rome; Dec 2, 6, 8.

BRUGES

EXHIBITION
Musée Memling
Tel: 32-50-44 6644
From Memling to Pourbus: exhibition illustrating the importance of Bruges as an artistic centre in the 16th century. Covering the period between Hans Memling (c.1430/40-94) and Pieter Pourbus (1523-84), it contains paintings, drawings, sculptures, tapestries and manuscripts; to Dec 6

CHICAGO

EXHIBITION
Art Institute Of Chicago
Tel: 1-312-443 3600
www.artic.edu
Art and Archaeology of Ancient West Mexico: more than 200 works, including terracotta figures found in tombs, and findings of recent excavations; to Dec 6

OPERA
Lyric Opera of Chicago
Tel: 1-312-332 2244
www.lyricopera.org
Rise and Fall of the House of Mahagonny: by Kurt Weill, libretto by Bertolt Brecht. New production, conducted by Sylvain Cambreling, with a cast including Catherine Malfitan; Dec 4

COLOGNE

OPERA
Oper der Stadt
Tel: 221-221 8400
Die Vögel: first modern staging for Walter Braunfels's opera. Premiered in 1920, it was banned by the Nazis and largely forgotten until a recent recording. This production is conducted by Bruno Weill and staged by David Mouchtar-Samorai; Dec 6

FLORENCE

OPERA
Teatro Comunale
Tel: 39-055-211158
www.maggiofiorentino.com
La Bohème: by Puccini. Conducted by Semyon Bychkov in a staging by Jonathan Miller; Dec 3

FRANKFURT

OPERA
Oper Frankfurt
Tel: 49-69-21237 999
www.frankfurt-business.de/oper
● Die Zauberflöte: by Mozart. Conducted by Guido Johannes Rumstadt in a staging by Alfred Kirchner. With a cast including Britta Stallmeister and Kirsten Blanck; Dec 3, 5, 7
● Rigoletto: by Verdi. Conducted by Olaf Henzold and staged by Kurt Horres. With John Bröcheler and Elzbieta Szmytka; Dec 2, 4, 6

HELSINKI

OPERA
Finnish National Opera
Tel: 358-9-403 021
Anna Bolena: by Donizetti. Conducted by Maurizio Barbacini in a new staging by Jussi Tapola, with designs by Anna Kontek; Dec 2, 4, 8

LONDON

CONCERTS
Barbican Hall
Tel: 44-171-638 8891
London Symphony Orchestra: Sir Colin Davis conducts a series of works by Elgar; Dec 6

Royal Festival Hall
Tel: 44-171-960 4242
London Philharmonic Orchestra: playing a score composed and conducted by Carl Davis. It accompanies a screening of The Thief of Bagdad, the 1924 film starring Douglas Fairbanks; Dec 6

Wigmore Hall
Tel: 44-171-935 2141
Fazil Say: Turkish pianist makes his first London recital. Music by Bach, Berg and Mozart features, as well as some of Say's own compositions; Dec 7

OPERA
English National Opera, London Coliseum
Tel: 44-171-632 8300
● Boris Godunov: by Mussorgsky. Conducted by Noel Davies in a new staging by Francesca Zambello, with sets by Hildegard Bechtler. Gidon Saks sings the title role; Dec 2, 4, 8
● La Traviata: by Verdi. Jonathan Miller's production includes Sandra Ford and Christopher Booth-Jones among the cast. Paul Daniel conducts; Dec 5

THEATRE
National Theatre
Tel: 44-171-928 2252
Betrayal: by Harold Pinter. Trevor Nunn directs Pinter's 1978 play, with a cast including Anthony Calf and Imogen Stubbs; Lyttleton Theatre; Dec 4, 5, 7, 8

NEW YORK

CONCERTS
Avery Fisher Hall, Lincoln Center
Tel: 1-212-875 5030
www.lincolncenter.org
New York Philharmonic: *conducted by Kurt Masur in* works by R. Strauss. With soprano Deborah Voight; Dec 4, 5

OPERA
Metropolitan Opera, Lincoln Center
Tel: 1-212-362 6000
www.metopera.org
La Traviata: by Verdi. Production by Franco Zeffirelli with a cast including Patricia Racette and Marcelo Alvarez. James Levine is *the conductor; Dec 4*

PARIS

CONCERTS
Salle Pleyel
Tel: 33-1-4561 6589
Orchestre de Paris: conducted by Emmanuel Krivine in works by Brahms, Beethoven and Dvorak. With piano soloist Krystian Zimerman; Dec 2, 3

OPERA
Opéra National de Paris, Opéra Bastille
Tel: 33-1-4473 1300
www.opera-de-paris.fr
The Merry Widow: by Franz Lehár. Conducted by Armin Jordan and with a cast including Frederica von Stade and Hakan Hagegard; Dec 4, 6

Théâtre des Champs Elysées
Tel: 33-1-4952 5050
The Magic Flute: by Mozart. Jean-Claude Malgoire conducts and the staging is by Pierre Constant. With La Grande Ecurie et la Chambre du Roy and the Maîtrise du Centre de Musique Baroque de Versailles; Dec 5, 7

ROME

CONCERTS
Accademia Nazionale di Santa Cecilia
Tel: 39-6-6880 1044
● *Orchestra and Choir of the* Accademia Nazionale di Santa Cec: conducted by Norbert Balatsch in works by Beethoven. With piano soloist Michele Campanella; Dec 2
● Orchestra and Choir of the *Accademia Nazionale di Santa* Cec: conducted by Myung-Whun Chung in works by Mozart and Mendelssohn. With piano soloist Murray Perahia; Dec 6, 7, 8

SAN FRANCISCO

OPERA
San Francisco Opera, War Memorial Opera House
Tel: 1-415-864 3330
www.sfopera.com
Peter Grimes: by Britten. Conducted by Donald Runnicles in a staging by John Copley, with sets by Carl Toms. The title role is sung by Thomas Moser; Dec 2, 5, 8

TOKYO

CONCERT
Orchard Hall, Bunkamura
Tel: 81-3-3477 9999
Silent Cities: the Tokyo Philharmonic Symphony Orchestra gives the world premiere of Mark-Anthony Turnage's composition, ending a year-long festival of British contemporary music; Dec 5

■ TV AND RADIO

● WORLD SERVICE
BBC World Service radio for Europe can be received in western Europe on medium wave 648 kHZ (463m)

EUROPEAN CABLE AND SATELLITE BUSINESS TV

● CNN International
Monday to Friday, GMT:

06.30: *Moneyline with Lou Dobbs*
13.30: *Business Asia*
19.30: *World Business Today*
22.00: *World Business Today Update*

● Business/Market Reports:
05:07; 06:07; 07:07; 08:20; 09:20; 10:20; 11:20; 11:32; 12:20; 13:20; 14:20.

At 08:20 Tanya Beckett of FTTV reports live from LIFFE as the London market opens.

COMMENT & ANALYSIS

MARTIN WOLF

UK and the spider

When it comes to Europe's single currency, the moral is: if at first you do not succeed, wait, wait and wait again

The pressure has already begun. With the launch of the euro now less than a month away, the British great and good, in advertisements and letters in newspapers, are calling on the government to say it will join as soon as possible.

This is what Tony Blair wants. He expected the country's self-exclusion from an up-and-running economic and monetary union to stir the British business and political elite into action. Their clamour is bound to become deafening. The prime minister will be forced to respond, at minimum political risk to himself. The UK will then join – probably at the wrong rate.

All this is depressingly familiar. British policy has, since the 1950s, been marked by lack of enthusiasm for the European project on the one hand, and fear of exclusion, on the other. The result has been reluctant and delayed entry into whatever the continent has agreed. This is the worst of both worlds: the UK ends up joining what it has had little say in creating.

For this reason I concluded two years ago that the UK had better join Emu from the beginning (FT October 1 and 8 1996). For good or ill, that chance has gone. The question now is whether the UK should join as soon as feasible or, having decided to wait and see, should continue to do so a while longer.

My answer is: wait. Having missed the earlier chance, it would be better not to join now. In this I will be no doubt accused of inconsistency. I could answer that a foolish consistency is the hobgoblin of little minds. More seriously, I do argue, with Lord Keynes, that when the facts change, I change my mind. How have the facts changed?

The first change is in European politics. Electorates have now chosen governments that have little, if any, sympathy with the underlying philosophy of the Maastricht treaty. Above all, Oskar Lafontaine, the new German finance minister, explicitly rejects his country's past adherence to the over-riding goal of price stability in the medium term. The full consequences of this shift have yet to be worked through but they will be huge and destabilising.

The second change is in British politics. Two years ago the UK seemed on the verge of detaching itself from the EU. Under Mr Blair, there seems much less chance of that, even if the country does remain outside Emu for many years.

The third and most important change, however, is in the domestic monetary policy regime. For the first time in my professional life, the UK has a monetary policy regime that is superior to the alternatives. In particular,

- The new regime is more transparent and politically accountable than the one in the Maastricht treaty;
- The monetary policy committee is a more professionally competent body than the European Central Bank; and
- The inflation target of 2.5 per cent is superior to the ECB's 0-2 per cent range, being symmetrical with respect to inflation and deflation.

Yet, like needles stuck in grooves, the arguments advanced in favour of the earliest possible participation have hardly changed. An advertisement by UK business leaders in the FT (November 23) says, for example, that "outside Emu British business would be burdened with higher interest rates". There is no reason why this should be so.

True, short-term official intervention rates are 345 basis points higher in the UK than in Germany at the moment, because of the very different cyclical position of the two economies. But the difference in 10-year government bonds is only 70 basis points. This is explained by the higher British short-term interest rates. But Bank of England unpublished estimates of the forward short-term interest rates implied by German and UK bond yield curves suggest short rates will converge by 2005.

That expectation may be explained by the belief that the UK will join Emu. But low expected British inflation could also lie behind it. On the EU's harmonised index of consumer prices, UK inflation in the year to October, at 1.3 per cent, is only marginally above the euro-zone's average of 1 per cent (see chart). The market seems to expect the UK's inflation target to continue to be achieved.

It has reasons for doing so. The UK's general government fiscal deficit this year is forecast at only 0.1 per cent of gross domestic product compared with 2.3 per cent in the euro-zone; its ratio of gross public debt to GDP is 52 per cent of GDP, compared with 74 per cent in the euro-zone; and the ratio of public spending to GDP is 40 per cent in the UK, against 49 per cent in the euro-zone.

All this should help the UK sustain low inflation and low nominal interest rates in the years ahead. True, if the ECB is expected to deliver inflation still lower than in the UK, nominal interest rates in euros will be lower. But there is no reason for real interest rates in the euro-zone to be any lower than in the UK. Given the strong fiscal fundamentals of the UK, Britain's real interest rates could be the lower.

The creation of the UK's new monetary framework is a dramatic change. It leaves only one significant benefit of membership of the euro-zone: exchange-rate stability.

Note, however, that exchange rate stability within the euro-zone is not overall stability. Being a very large economic area with a low ratio of trade to GDP, the euro-zone is likely to practise benign neglect of the exchange rate (indeed, an activist exchange rate policy might be inconsistent with the overriding goal of price stability). In that case the UK's overall exchange rate could be as unstable within that zone as it has been outside it, with absolute stability vis a vis the other members offset by greater instability *vis à vis* currencies outside. This would matter because more than 40 per cent of the UK's exports of goods and more than 60 per cent of its exports of services go outside the EU.

A still more important doubt, however, concerns the value of exchange rate stability. The overall benefits for an economy as big as the UK's (the fifth largest in the world) are probably quite modest.

Despite being outside the exchange rate mechanism for all but two years in the past two decades, UK economic growth has compared well with the EU average, while UK unemployment is little more than half the euro-zone average. Moreover, the stock of inward direct investment in 1997 was 23 per cent of the EU's total, while the inflow in 1997 was 35 per cent of that total. The fluctuating exchange rate does not appear to have damaged UK real economic performance, or its attractiveness to foreign investment.

Maybe, the UK should have been in Emu from the beginning. But it is not. Maybe the UK should be in the middle of the current debate between Euro-monetarism and Euro-Keynesianism. Again, it is not. Now that it has a sensible monetary policy regime of its own, it is in an excellent position to wait and see. It should try to find out whether this risky project works, which may not be clear for years.

There is no powerful economic objection to this course. The arguments against it are political. Reasonable people may reasonably differ on this. But to its continental partners the UK can advance at least two strong reasons for remaining outside: first, the very last thing the euro-zone needs is a member whose people will blame every economic failure on the euro; and, second, the euro-zone will benefit from a credible competitor, dedicated to monetary stability and economic flexibility, but with a different model of central bank independence.

The UK has waited and may soon see a euro-zone in turmoil. The right reaction is to wait – and wait again.

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UK and the euro-zone

	UK	E11
Unemployment rate*	6.2%	10.9%
Inflation rate**	1.3%	1.0%
Fiscal deficit as % of GDP***	-0.1%	-2.3%
Gross public debt as % of GDP***	51.6%	73.5%
10-year bond yield****	4.66%	3.96%

* Sep E11, Jan UK
** Harmonised indices for consumer prices for Oct 1998
*** European Commission forecasts for 1998
**** Latest, E11 is Germany
Sources: European Commission; Datastream/ICV

LETTERS TO THE EDITOR

No substitute for structural reform

From Mr Stefano Micossi.

Sir, Martin Wolf argues ("Is Lafontaine half-baked?", November 25) for closer policy co-ordination within the euro-zone. The argument seems to rest on two questionable assumptions.

The first is that monetary policy is important, indeed so important that budgetary policies could not be "virtuous" unless there was some reassurance that "well behaved" governments would be rewarded by the European System of Central Banks.

In reality, a further decline in interest rates in Europe, say from 3 per cent to 2 per cent, is unlikely to revive growth and employment. This is stifled by high costs, closed markets for services, and rigidities across the field. The main lesson from many years of inflation and disinflation is that, in the longer run, monetary policy is not very important in determining real economic performance.

Further, one needs to consider that:

1. Monetary policy is loose and loosening everywhere throughout Europe.
2. It is loose because budgetary policy has remained tight over the last years.
3. Inflation will remain low as long as the public is convinced that the ESCB will not accommodate inflation.
4. With this policy mix, the exchange rate of the euro will not be too strong, given also that the US economy is growing more rapidly than that of the euro-zone.

The second assumption is that co-ordination of macro-policies is insufficient in Europe.

The stability and growth pact is there precisely to ensure the kind of policy co-ordination advocated. This should ensure that inflation remains low and monetary policy conditions accommodating.

As to the structural reforms, it is questionable whether further co-ordination is feasible under current structures or, indeed, desirable. Countries that have gone ahead alone with structural reforms found that there is an important reward in terms of growth and employment.

Why try to co-ordinate this process?

The truth of the matter is that expansionary budgetary policies (co-ordinated or not) can offer no quick fix to Europe's economic problems. Instead, private capital is abundant, and ready to flow to good opportunities, including investment in infrastructure. The reason it doesn't is that relative prices and other conditions are not right (notably market access, i.e. liberalisation). There is also evidence that the reaction of private investment can be rapid; for example in face of aggressive liberalisation of key network services (telecom, transport, and energy), where potential rewards are enormous.

The idea, therefore, that co-ordinated public spending is the way out of the current situation is not only wrong but counterproductive: it risks being perceived as a substitute for necessary structural reforms.

Stefano Micossi,
European Commission,
15, Rue de la Science,
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Clinton's new economic order is a mere political ploy

From Mr Steven Richman.

Sir, It is the ultimate commentary on the small, self-absorbed man in the White House that his focus remains on his endless campaign rather than governance and leadership ("Clinton considers a new economic order" November 24). Having campaigned originally as the "domestic" president, having failed to achieve his keystone health-care reform, he flounders for anything to promote his "legacy", rather than lead.

You write: "It is harder, [Clinton] says, to earn such a reputation [for greatness] in times of peace and prosperity." Greatness comes when people are the *means* towards a more profound end, and not when they make themselves the end and policy the means.

Perhaps if he focused on meaningful leadership based on a core philosophy instead of being obsessed with a vacuous "place in history" and lurching from issue to issue, he might have achieved some of the promise with which he began.

Mr Steven Richman,
212 Carnegie Center,
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USA

Tame inflation outlook in Lithuania

From Professor Val Samonis.

Sir, In your otherwise enlightened Survey of Lithuania (November 25), you forecast an upturn in inflation in 1999. In fact, due to a strict macroeconomic policy and anti-inflationary impulses stemming from the emerging markets' crisis, inflation may continue to be lower than real growth, a trend that Lithuania set for the entire region.

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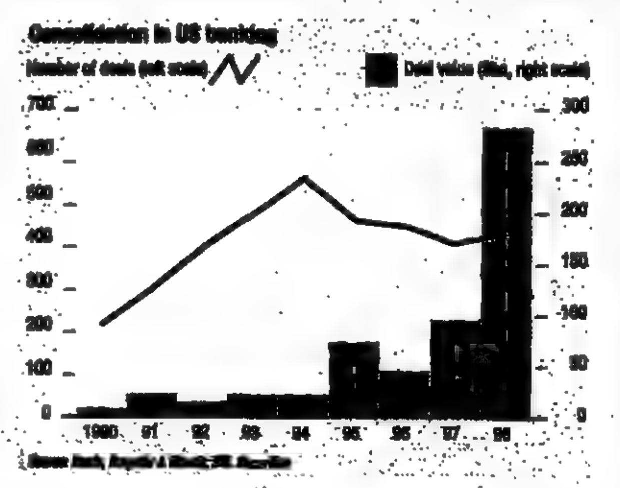
Shrinking middle ground

Now that Deutsche Bank has taken over Bankers Trust, Tracy Corrigan considers where that leaves other medium-sized Wall Street firms

In selling out to Deutsche Bank, Bankers Trust has finally abandoned its attempt to build an independent medium-sized investment banking business on Wall Street. This is the largest, but only the latest development in a two-year round of consolidation on Wall Street, which has seen the likes of Oppenheimer and Dillon Read gobbled up by bigger parents. What does it mean for those left behind in the now sparsely populated middle ground of investment banking – for companies such as Paine Webber, J.P. Morgan and Lehman Brothers?



"There are two views," says Sallie Krawcheck, financial services analyst at Sanford C. Bernstein, the US brokerage. "One is that Bankers Trust presumably couldn't make it work, therefore it can't work. The other is that there is business to be gained." To judge from the opinions of those involved, the latter view seems likely to prevail. "Most brokerage firms are viewing this combo not as a threat but as an opportunity," says Ms Krawcheck, "[because there are likely to be] unhappy clients and unhappy employees."

But are they right to do so? After all, the recent spate of mergers and acquisitions is itself a testament to the widespread desire for critical mass. At the outset of the latest phase of consolidation, the driving force was ambition. Investment and commercial banks were jockeying to join an emerging elite of businesses able to span the world's financial markets (the so-called "bulge bracket").

But recently, partly because stock markets have been falling after more than a decade of gains, consolidation has started to look more defensive. The middle ground, it is widely held, has become too small in a world of global contagion and financial-services supermarkets.

One reason for thinking that is that investment banking is a capital-intensive business. When Sandy Weill approached Citicorp about a merger this year, it was partly because his financial services giant Travelers Group, the parent of Salomon Smith Barney, "needed a much stronger equity capital base so that next time [a market dislocation happens] it would be an opportunity not a catastrophe", as he put it recently. The merger created Citigroup, one of the world's largest financial services groups. Concentrating on a few segments of the market can leave firms highly vulnerable to market turmoil in those areas, as Bankers Trust, with its specialities in emerging markets and high yield, found in the third quarter, when it recorded a loss of nearly $500m. As in the oil business, the advantage of sheer size is that it enables risk to be spread over a wider range of markets and assets.

The emergence of commercial banks in the securities business has transformed perceptions of what 'big' really is in investment banking

Risk increased as a result of the globalisation of financial markets. Globalisation once appealed to investment banks partly as a means of flattening the cycle of earnings. The trouble is that markets can now all swing at once – as they did this summer after Russia's default on its domestic bonds in August.

The other problem with the middle ground is that medium-sized firms are often chasing the same deals as bigger competitors, but may not be able to offer the same range of financing options. "You have to have a core set of services that covers 70 per cent of what the client needs," says Michael McCafferty, chief executive officer of BancBoston Robertson Stephens. Otherwise, it is impossible to "help the client achieve the lowest cost of capital". Robertson Stephens, the San Francisco-based investment bank specialising in technology, is now owned by BancBoston which has a lending and high yield bond capability to complement Robertson's expertise in advising and raising equity for growth companies.

So who might be the next to go? Lehman Brothers is a leading candidate after its rocky ride during the recent market downturn. "They haven't made a lot of money but they have made a little money, which is better than a lot of firms," concedes Ms Krawcheck. Still, analysts worry about how the firm would fare in a prolonged and painful bear market.

Paine Webber is another possibility. It recently had talks with Dresdner Bank. It has a large retail distribution network – an obvious prize – but it has little to offer in advancing investment banking ambitions.

Of course, every seller needs a buyer, and Deutsche's acquisition takes the most aggressive buyer out of the market. Dresdner and Chase still appear interested, and others, such as the new UBS are seen as potential bidders.

But the emergence of the big commercial banks as players – and buyers – in the securities business has transformed perceptions of what "big" really is in investment banking. Once, Merrill Lynch and J.P. Morgan were the giants of the business. But they are small in comparison with commercial banks. Chase, for example, views them both as potential targets. The appearance of banks such as Deutsche on Wall Street means that even Merrill Lynch and Goldman Sachs (which still says it plans to go public next year) can now be considered medium-sized. And they, of course, are announcing healthy profits. That suggests the middle ground might not be quite such a bad place after all.

Still, in order to survive, you have to have a strong balance sheet, plenty of capital – and probably a spread of businesses. Pure investment banks suffer disproportionately in a market downturn. Morgan Stanley Dean Witter, for example, did much better than its peers in recently because its earnings come from brokerage and credit cards as well as investment banking.

In short, while almost everyone believes that big has advantages in financial services there are doubts both about what "big" actually is and about how to create it. Concerns are growing about some of the giant mergers produced by bolting together very different sorts of company. The jury is still out on the new Citigroup, for example.

So has Wall Street been transformed fundamentally? Perhaps not. Consolidation is as old as finance itself, and while some firms disappear, new boutiques and specialist firms continue to emerge. "The unchanging history of this business is that more capital comes in," says Ms Krawcheck. "There is no consolidation, there is just combination and fragmentation."

FINANCIAL TIMES

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Wednesday December 2 1998

Choosing the WTO's leader

World Trade Organisation members today make their first stab at agreeing who should succeed Renato Ruggiero as the body's director-general. They have four candidates: Morocco's Hassan Abuyoub, Canada's Roy MacLaren, New Zealand's Mike Moore and Thailand's Supachai Panitchpakdi. All have respectable credentials, but none clearly leads the field. What should decide the choice?

Mr Ruggiero has successfully established the four-year-old WTO as an effective guardian of multilateral trade. His successor's overriding task will be to push the liberalisation agenda forward, at a moment when economic fragility, threats of protectionism and popular unease about globalisation are placing governments' commitment to open markets in question.

WTO members already plan talks in the next two years on freeing trade in agriculture and services, which may develop into a full trade round. The new director-general can play a decisive role in shaping the outcome. But with few formal powers and a small staff, his personal qualities will be all-important.

These need to include administrative competence, a capacity to forge consensus through the judicious exercise of charm and toughness, and the ability to command respect at the highest levels of government. More than ever before, the job will also require sensitivity to domestic political and economic realities in WTO member countries.

In the US, the demise of the old free-trade coalition means trade policy must seek support from a heterogeneous collection of political and popular lobbies. Some are deeply suspicious of the value of open markets and of the WTO. It will be even harder to win them over if slower US growth and a bigger trade deficit unleash protectionist pressures.

Meanwhile, many developing countries complain that they lack the administrative capacity even to fulfil commitments in the 1994 Uruguay Round agreement. They have a good case. The integrity of the global trade system requires their active participation. The next WTO head needs to fight for a bigger budget, to finance the technical assistance needed to bring poor countries up to speed.

But developing countries are wrong to insist that one of them should by right provide Mr Ruggiero's successor. Such demands smack of "Buggins' turn" logic. They also risk accentuating regional and economic divisions in the WTO and compromising its director-general's crucial role as impartial arbiter between all members' interests.

The appointment should be based solely on personal merit. It also needs to be decided quickly. How it is handled will be an important measure of the WTO's capacity to tackle trials to come.

Québec quoi?

Lucien Bouchard and his separatist Parti Québécois (PQ) have won another five-year term in Canada's francophone province. But it was not the landslide predicted. Indeed his federalist opponents, the Liberals, won slightly more of the popular vote; but ended up with fewer seats.

So Monday's election gave Mr Bouchard no clear mandate to stage an early referendum on separation from Canada. But it was a reward for Mr Bouchard's sound stewardship of Quebec since he took over in 1996. He should see this as a mandate to continue in the same pragmatic vein, talking much but doing little about severing Quebec's links with the rest of Canada.

Mr Bouchard beat the Liberal leader, Jean Charest, for several reasons. He proved a better campaigner. He pruned the budget deficit by cutting health and education spending. This was not exactly popular. But many Québecois, who tend to a social democratic European rather than north American view of government's role, realised these cuts were less drastic than those that would have followed Mr Charest's promised 30 per tax cut.

Mr Bouchard also showed masterful ambiguity in promising another referendum on separation when there were "winning conditions" for it. This formula has the effect of encouraging his hardline separatists to keep working for such conditions, and many of his softliners to tell opinion pollsters they are against another referendum soon.

The PQ victory means that the uncertainty of the 30-year impasse between English and French Canada continues. This has been bad for Quebec: its economy has underperformed the rest of Canada and its jobless rate is nearly three points above the national average.

The impasse has proved impossible to break by constitutional reform. All efforts to give Quebec more than the very considerable cultural and economic autonomy it already has have foundered on the requirement for unanimity among all 10 provinces. Mr Bouchard is now interested in joining other provinces in negotiating a new "social union" with Ottawa on federal social spending. But such an arrangement would merely weaken the Canadian federation further without necessarily keeping Quebec in it.

Ultimately, Quebec separatism is an affair of the heart, and will be resolved as such. In the meantime, Mr Bouchard should focus on the day to day issues of restraining spending, cutting his province's excessively high taxes, and helping it catch up with the rest of the country. Quebec residents make up a quarter of Canada's population. Improving their prosperity is in the interests of all Canadians.

Tax discord

The battle over tax harmonisation in the European Union is hotting up, as exaggerated rumours heighten the fears and fury of British Europhobes.

Britain's position as the chief defender of unfettered tax competition appears increasingly threatened in the crossfire between this vociferous lobby and centre-left governments on the continent. But it must not allow a desire to be a "good European" to push it too far towards compromise – or into ceding its veto.

Those who want tax harmonisation start from an uncontroversial proposition. Implicit taxes on labour (now more than 40 per cent on average in the EU) are too high, and are an important cause of continental unemployment. Agreed. But the enthusiasts for harmonisation argue, much more dubiously, that the cause is "harmful tax competition" between member states. This, they say, erodes the value of taxes which can be avoided by those who can relocate their businesses or investments.

The evidence for this is thin. First, corporate taxes represent only about 6 per cent of the total tax take in EU countries, so "unfair" competition could have only a small effect. Second, there is little evidence that the EU tax base has been eroded by such practices. In the past 30 years the tax take has risen from 27 per cent of total gross national products to 41 per cent. By far the largest rises have been in social security taxes which now represent more than 20 per cent of GDP in France, 15 per cent in Germany and 18 per cent in Italy, but only 6 per cent in the UK, where many more people have private pensions.

Damagingly high taxes on labour therefore mainly reflect ballooning social security and pensions costs. Tax competition may be an irritant to the governments responsible, but it is not the main cause and must not be made the scapegoat.

The spectacular success of Ireland's low corporation tax policies and of Luxembourg's banking regime undoubtedly cause problems for other governments, but they should not obscure the fact that competition between fiscal regimes will, over time, be beneficial for jobs and prosperity.

Britain and the US, with relatively low tax regimes, have enjoyed faster growth and lower unemployment than the continent of Europe in recent years. Clearly, the tax regime is not the only cause, perhaps not even the main one, but it would be foolish to ignore it. Tax competition points accusingly to the bloated social security budgets in continental European countries. They must draw the right moral: to start slimming, rather than insist, from a perverse idea of harmony, that everyone else should put on weight.

Bigger oil

Merger mania will not stop with Exxon-Mobil and others, says Daniel Yergin. But the petroleum business is transforming itself into something new, not just recreating Standard Oil

"Life's just one damn thing after another," said John Archbold to his board in 1911, as the tickertape brought word to the headquarters at 26 Broadway of the Supreme Court's order to break-up John D. Rockefeller's Standard Oil Trust. As the news sunk in, the directors sat in stunned silence. It was Archbold, Rockefeller's successor, who broke the spell. He began to whistle.

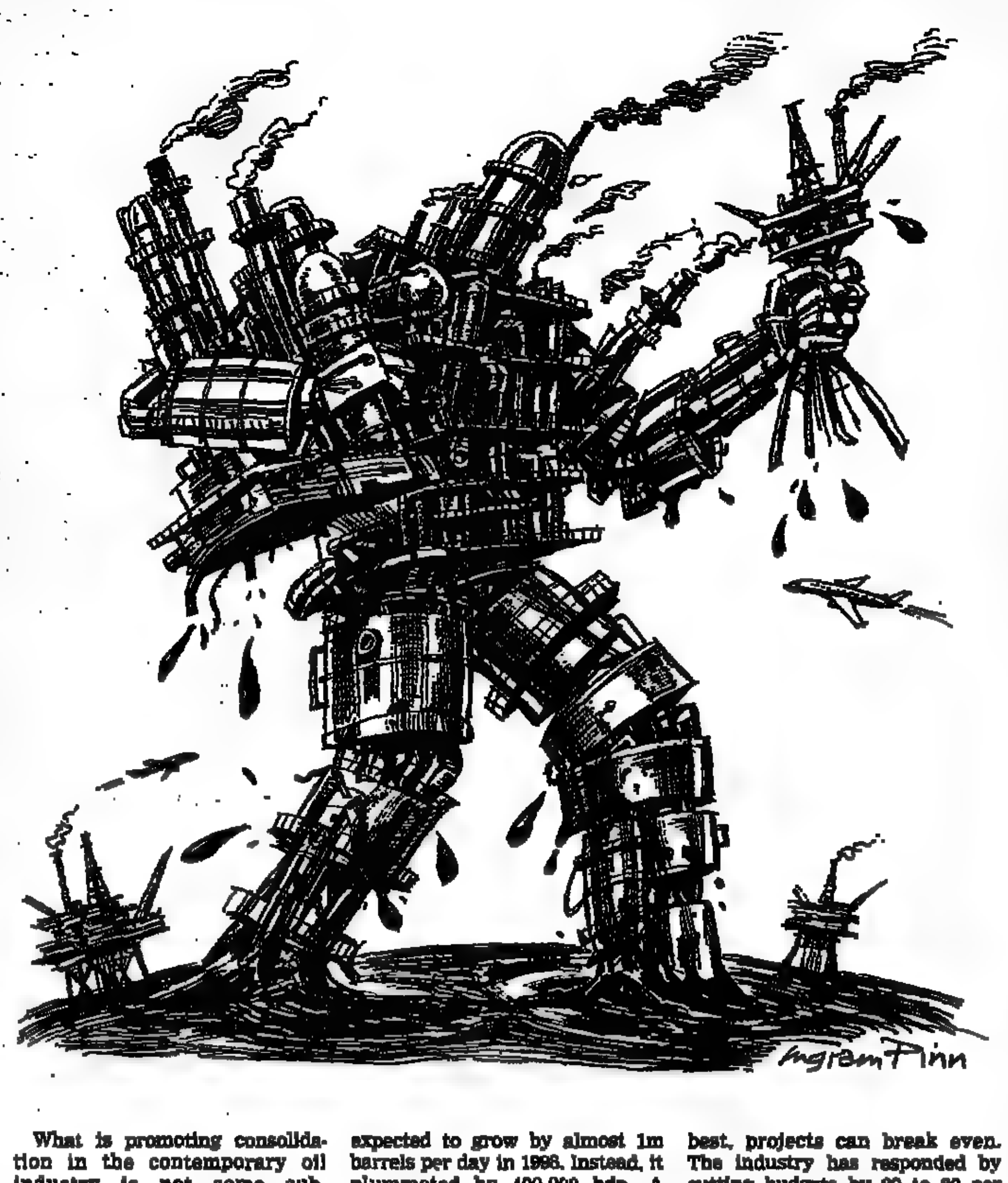
One may whistle now in amazement at the scale of the new company that will be formed from the $75.3bn takeover of Mobil by Exxon. In size, it overshadows even the recent combination of BP and Amoco and certainly yesterday's news that France's Total is taking over Petrofina of Belgium. With so much merger activity, much is being made of the reconstitution of Rockefeller's company.

But beyond the inheritance of oil lamps and the lineage itself, there is not much continuity. The 1911 break-up occurred at a time when kerosene for oil lamps was still the oil industry's most important product, the motor car was only just beginning to be something more than a curiosity, and Standard Oil's monopoly was already being eroded by the rise of new competitors.

By the time of the dissolution, the largest successor company, Standard Oil of New Jersey (later to become Exxon), was a ramshackle refining outfit that did not acquire its own major oil wells until 1919. The second largest, Standard Oil of New York (later Socony-Vaccuum, and still later Mobil), was primarily an international marketing operation.

In the intervening decades, Standard Oil's successors vastly expanded their investments and activities on a scale that would simply have been inconceivable to Rockfeller. In fact, it would be hard to identify any of the original 1911 assets in Exxon or Mobil. A major recent source of profits for Mobil, for example, has been its Indonesian liquefied natural gas project – a form of energy unknown to the man who built Standard Oil.

In contrast to Rockefeller's days, the industry today is highly diverse and competitive. It has become even more competitive since the oil price collapse in 1986. Many state-owned companies have been privatised – including ENI in Italy and YPF in Argentina – and have become active international participants. Smaller companies have extended their reach; and new technologies have become widely available, lowering the cost of exploration and production.



What is promoting consolidation in the contemporary oil industry is not some subconscious drive to recreate the ancient empire but an altogether different "damn thing": hard economics.

Oil was one of the first global industries to be hit by the Asian crisis. For the past several years, the "prize" for the world petroleum industry was Asia. Until the second half of 1997, the rapid growth in consumption in that region was increasing prices and boosting spending on exploration and production around the world. Companies complained that geologists and engineers were in such demand, there were not enough to go around. Senior executives were being poached by other companies. The charges for drilling ships, and other services were rocketing. The industry looked as though it was heading into another boom. And all this was less than a year and a half ago.

Then came the Asian debacle. The region's demand had been expected to grow by almost 1m barrels per day in 1998. Instead, it plummeted by 400,000 bdp. A warm winter and increased world output added to over-supply. Prices plummeted, falling by more than 40 per cent between 1997 and 1998.

Yesterday, crude oil futures fell to under $11 a barrel, in nominal terms the level of the oil-price bust of 1986. If inflation is taken into account, the price of a barrel of oil today is back to where it was before 1973, 25 years after the first great oil crisis.

The industry did a remarkable job of adjusting to the earlier price collapse in 1986. By restructuring and applying new technology, it brought costs down to a level that allowed oil companies to undertake exploration profitably with prices at $15-16 a barrel. A decade earlier, the break-even point for exploration in similar areas might have been nearer $30.

But with oil prices at $11 or $12, the economics of new projects become problematic. At best, projects can break even. The industry has responded by cutting budgets by 20 to 30 per cent and stretching out the timing of new projects. The risk of the business is being recalibrated.

Mergers and acquisitions are the ultimate form of cost-cutting, sometimes to be measured in the billions of dollars. Once the tumult of the merger passes, they enable companies to spread their costs over a larger base. The rapid evolution of information technology adds to the efficiencies and enables knowledge to be more widely diffused. The larger base enables companies to broaden their portfolio, manage risk, and assume more easily the multi-billion-dollar 20-year projects, such as Caspian oil or Asian natural gas, that loom in the next decade. Altogether, the savings enable the companies to work their way back to acceptable returns on capital.

But more than that, mergers are transforming the industry. Just as BP-Amoco encouraged "merger think" and generated the idea of the "super-major", so a combination between Exxon and Mobil is likely to foster other mergers.

By the time this period of extremely low oil prices is over, the landscape of the industry will look different. There will be further consolidations, some perhaps obvious, some likely to be surprises. And as the new combinations rationalise their operations, they will shed some holdings. That that will create opportunities in production for entrepreneurial independents, which have the same access to technology as the super-majors, to move up in scale. Parallel opportunities will be available to penny-conscious operators in refining and marketing.

The driving force for consolidation is not only lower prices but the expectation of an extended period of low prices. It is possible that the spectre of the 1930s depression might lead fearful central bankers and finance ministers to encourage global reflation over the next year. And if this were to happen, an economic recovery could lead to stronger commodity prices earlier than people might expect.* But no management dare make that bet for their companies. At least, not yet.

One aspect of the 1911 dissolution does echo today. The break-up of the Standard Oil Trust occured at a time of technological change, with the arrival of the internal combustion engine. Rockefeller made his fortune as an illumination merchant, but at the time the Supreme Court acted, oil's main market was shifting from kerosene lamps to motor fuel. The 20th century has proved to be, as Henri Deterding, the mastermind of Royal Dutch/Shell, put it in 1916, "the century of travel". And, while the oil industry serves a multitude of markets, by far the greater part of its business has been to provide the fuel for that travel.

Billions of people around the world are still waiting for their first car. And the likelihood remains that that car will be powered by petroleum products. Oil prices may be at a historic 25-year low. But the historic role of oil is hardly over.

The author is chairman of Cambridge Energy Research Associates, and wrote The Prize, the History of Oil.

**Cambridge Energy Research Associates, "When Will the Asian Financial Crisis End?" November 1998.*

Barrel of trouble for exporters

The collapse in oil prices is not only redrawing the shape of the oil industry; oil-exporting countries are also going through their share of pain, and are being forced to rethink their investment strategies and alliances.

One of the main causes of Russia's penury this year was its loss of vital oil revenues. In Venezuela, the emergence of a populist leader of an attempted coup as the likely winner in Sunday's presidential elections has raised doubts about the continuation of the country's investor-friendly oil policies.

Whereas oil-rich nations set the terms of foreign investment in the past, low prices mean they will now have to make the deals more attractive. There is great interest in exploring Brazil's potentially large off-shore reserves, for example, but the terms it is offering companies are simply not competitive with opportunities elsewhere.

Low oil prices are also putting pressure on petroleum-exporting countries in the Middle East, which had nationalised their oil industries by the mid-1970s. In one way or another, the leading Gulf oil nations, no longer willing or able to shoulder all the risk themselves, seem prepared to reopen the door to foreign investment.

This could shift the industry's capital budgets away from higher-cost areas, such as the North Sea, back to the Middle East, the heartland of world oil reserves and the Eden from which international oil companies were expelled not so many decades ago.

Oil and gas deals since 1997

Date announced	Companies		Value	Status
Dec 1998	Total	PetroFina	$7.0bn	Proposed
Dec 1998	Exxon	Mobil	$75.3bn	Proposed
Nov 1998	Seagull Energy	Ocean Energy	$1.1bn	Proposed
Aug 1998	BP	Amoco	$48.2bn	Proposed
Feb 1998	Halliburton	Dresser Industries	$8.9bn	Proposed
Oct 1998	Kerr-McGee	Oryx Energy	$3.1bn	Proposed
May 1998	Baker Hughes	Western Atlas	$4.6bn	Completed
May 1998	Arco	Union Texas	$2.7bn	Completed
Apr 1998	ENI fourth tranche*		$6.6bn	Completed
Jan 1998	Union Pacific Resources	Norcen Energy Resources	$3.5bn	Completed
Oct 1997	Occidental Petroleum	Elk Hills Petrol**	$3.7bn	Completed
Jul 1997	Burlington Resources	Louisiana Land and Exploration	$3.0bn	Completed
Jul 1997	Falcon Drilling	Reading and Bates	$2.6bn	Completed
Mar 1997	ENI third tranche*		$7.6bn	Completed

Source: [illegible] Securities Data * [illegible] ** US privatisation

OBSERVER

Brussels blight

Nobody who turned up for the European Parliament's budgetary control committee yesterday expected a lively time – except perhaps Stefano Micossi, the European Commission's director-general for industry.

Unusually for a very senior Brussels official, Micossi appeared in a personal capacity – and complained about the power wielded by members of commissioners' cabinets.

The Commission's administrative structure, he said, was exposed to "potential political interference unparalleled in member states' public administrations". The cabinet system encouraged people to maintain political connections in their home countries and to succumb to conflicts of loyalty.

Jaws dropped and many MEPs showed their support for the whistleblower by banging their desks.

Micossi's remarks reflect a growing sense of dismay among the Commission's permanent staff that they are losing out in the promotion stakes.

Three-quarters of the present commissioners are expected to stand down at the end of 1999, and many of their cabinet members will be seeking to parachute into top jobs over the next year at the expense of the Eurocrat in the street.

Micossi's future career will be watched closely. His performance yesterday immediately triggered rumours that he might soon move on to another senior post – outside the EU bureaucracy.

Yankee doddle

Hoechst has bent over backwards to clinch yesterday's deal with Rhône Poulenc. The German outfit is bigger than its French partner, but the new supergroup – oddly named Aventis – will have its headquarters in Strasbourg and be incorporated under French law.

So as if German unions were not enough of a handful, Hoechst boss – and now Aventis supremo – Jürgen Dormann and his colleagues will have to learn the treacherous ways of French industrial relations.

The stylish Jean-René Fourtou, RP's boss who will be the new group's vice-chair, looked relaxed, even triumphant at the nuptials in Strasbourg, but the more pensive Dormann soon made clear he was in charge when he grabbed the role of master of ceremonies.

So is the merger of "equals" a German takeover dressed up to soothe French amour propre? Maybe, but it's an American who'll drive the biggest desk.

Richard Markham, Hoechst's drugs chief in Frankfurt, is to head the merged group's pharmaceuticals business, the biggest slice of the new Franco-German cake. So forget Franco-German rivalry in what's described as a very European company: the clear winner flies the stars and stripes.

Bumpy ride

Everyone knows that consultants are made of different stuff – and many thanks to Volvo for confirming it. The Swedish auto company says it needs to reduce its staff "by 5,300 persons and more than 700 consultants". Case proven.

Shell suit

Oil watchers with long memories might not be surprised that rumours of a takeover of Belgium's PetroFina by its French rival Elf Aquitaine turned out to be wide of the mark.

There was much takeover talk in 1993 when it emerged that Elf had 4.9 per cent of the Belgian group. But that was under the presidency of Loïk Le Floch-Prigent, and the shares were sold after the installation of current chairman Philippe Jaffré.

Jaffré might still have something up his sleeve, and Shell's step back from a more refined relationship with Texaco, giving the UK-Dutch combine some freedom of manoeuvre, has provoked speculation about a Shell-Esso hook-up.

Shell's trigger finger must be itching after recent expansion by rivals Exxon and BP, though it doesn't have their high share price to help in empire building – and after all these years Royal Dutch Shell is itself still an unconsummated merger which might find a *ménage a trois* too clumsy.

If Shell and Elf do eventually cuddle up together, would they call it Shelf?

Orban clearance

Hungarian prime minister Viktor Orban is apparently none too pleased with Jozsef Torgyan, the agriculture minister who heads the Smallholder party, the junior partner in the ruling coalition.

Orban is all for ousting directors of state companies appointed by the former Socialist-Liberal coalition, but draws the line at replacing them with Torgyan's relatives.

So the PM's office was not best pleased when Beatrix Hingyi, Torgyan's daughter-in-law, got a seat on the board of national carrier Malev and her mother turned up as a supervisory board member at the national lottery company. Torgyan's son and his wife's cousin also have plum jobs with state corporations.

A quiet chat at the weekend brought results. Beatrix and her mum have resigned. Nothing to do with nepotism, of course, it was all the fault of the "unethical press campaign" against them.

The Financial Times

100 years ago

Lake Huron Copper Mine
Lord Douglas of Hawick, who took such a prominent part in the development of the gold resources of Western Australia in the early days, has just returned to London from Ontario, where he has been devoting his energies to opening up some copper propositions on Lake Huron. This section of country, which is practically virgin ground, consists of immense deposits of low-grade ore, which, on account of the water facilities, can be worked at a very cheap and profitable rate.

50 years ago

S. Africa's Problems
Brakpan, S. Africa, Dec 1. Mr. Nicholas Havenga, South African Minister of Finance and leader of the Afrikaaner Party, said here to-day at the party's Congress that it would be undesirable and dangerous to force a decision on the Union's fundamental colour problems without due regard to a clear expression of the will of the people. "The Government must and will, on the basis of apartheid, urgent problems of the relationship between white and black which accumulated while the previous Government regarded racial segregation as dead."

FINANCIAL TIMES

WEDNESDAY DECEMBER 2 1998

THE LEX COLUMN

No gusher

Look past the superlatives and Exxon's $75bn takeover of Mobil is just a very big in-fill acquisition. Regulators permitting, Mobil will expand Exxon's upstream presence outside North America, beef up its gas reserves and bring it some nice high-margin lubricants.

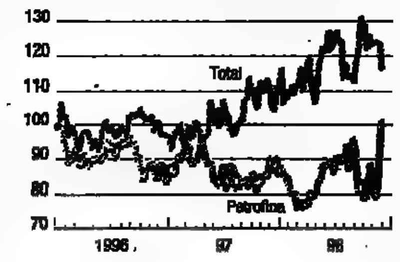
But the strategy of the new giant is not changing one whit; like the rest of the oil industry, it will continue to cut costs and squeeze assets in pursuit of higher returns. It will simply have more assets to work on.

For shareholders, this lack of imagination is good news because it should equate to clarity of focus. Instead of pretending it is changing the world, Exxon Mobil merely wants to grind out a higher return on capital – which was 15 per cent on a blended basis in 1997. And given that Exxon is much larger – the split is roughly 70:30 on most measures – and its management will be firmly in charge, the promised efficiencies will be pushed through swiftly.

That said, $2.8bn of cost savings in two years looks unambitious compared with the $2bn announced by BP Amoco, which has half the revenues. Taxed and valued on a multiple of 10, these amount to $18bn – $16bn of which has been handed to Mobil's shareholders via a 25 per cent premium to its stock price since the deal was first mooted. To collect their rewards Exxon shareholders will have to wait for the management to eliminate low-return projects.

European oils

Share prices relative to the Datastream/ICV World Integrated Oils index (common currency terms)



Source: Datastream/ICV

Total/PetroFina

And the animals went in two by two. Hurrah? Certainly not for Total shareholders, who have watched their highly-rated paper plunge on the acquisition of Belgium's PetroFina. Once again, management twitchiness has resulted in a deal that will destroy rather than create shareholder wealth. Netting out yesterday's divergent moves in the two companies' share prices – the much larger Total down 12 per cent and PetroFina up 18 per cent – suggests value destruction close to $2bn.

What of the promised $350m annual savings seen by 2000? Net of tax and one-off restructuring costs, these should be worth around $1.5bn in today's money, or less than 7 per cent of Total Fina's pro forma market value. Since the savings have not been properly explained, the suspicion is that each company could have achieved the bulk of them without needing to merge at all. And as Renault's Vilvoorde experience showed, political obstacles to French companies' restructuring in Belgium can be formidable.

Justifying the 37 per cent premium paid to PetroFina shareholders looks uncommonly difficult. But then, no one seems to be trying very hard. Simply getting bigger than arch-rival Elf looks to be an important driver behind the deal.

Neither wants to concede the whip hand in the negotiations for that much-mooted in-market merger. And Albert Frère, the Belgian financier, has taken full advantage.

Hoechst/Rhône-Poulenc

Hoechst and Rhône-Poulenc must think that the grander the joint venture, the more likely it is to work. Production at their US blood products unit, Centeon, was halted in August because inspectors found numerous breaches of rules – not a good omen for their combined management ability. The losses fed through into Hoechst's third profits warning of the year. Rhône-Poulenc has also admitted it will miss its earnings growth target.

So is the two-stage merger an elaborate protection plan for two weak companies? Not completely. By slimming down to their more attractive drugs and agrochemical cores, they have become more exposed targets in these deal-hungry sectors. Their shares are not expensive enough to offer the protection enjoyed by, say, Zeneca. Moreover, both were making progress, although Hoechst's was painfully slow. Nevertheless its shareholders should not celebrate sharing the eventual benefits of the Hoechst Marion Roussel integration. The 50:50 split favours the French company, which is rather smaller in pharmaceuticals.

The saving grace would be a conviction that the two could achieve their slipping targets more easily together. Discouraging signs are a management structure that smacks of ego-protection and the unnecessary diversion of setting up a brand-new HQ. In theory, the merger has pluses – notably in agrochemicals and drugs marketing – but delivery is the key.

Lonrho

Lonrho's African progeny has hogged the limelight for six months but the former parent, now stripped down to its platinum, coal and gold operations, has been uncharacteristically quiet. Since September Lonrho's shares have rallied by 46 per cent, and now the rumour-mongers think a big deal is afoot. There are two theories around. First, that Lonrho is close to unblocking the impasse over Gencor's 23 per cent stake in its platinum division. Second, that Ashanti Goldfields, in which Lonrho has a 33 per cent stake, might buy Lonrho.

The latter story looks fanciful. Ashanti has too weak a balance sheet for such a dilutive move, and any change of control at Lonrho would let Gencor's Impala subsidiary take full control of the platinum business. The platinum thesis is more promising. The European Commission ruled that merging Impala with Lonrho Platinum would be anti-competitive, and the result of Impala's appeal is due by Christmas.

The betting is that the Commission will not be over-ruled. But with no guarantee that Gencor will simply give up and sell out, Lonrho still needs to find other ways to get big. There is now no strategic merit in the minority share in Ashanti. This could be sold, on any gold price rally, to finance precious metal acquisitions where it can take full control. If Lonrho cannot find the deals to gain critical mass, someone else should take it over.

EUROPEAN DEFENCE INDUSTRY LIKELY TO HAVE TWO COMPETING GROUPS

France forced to accept merger of BAe and Dasa

By Robert Graham and Ralph Atkins in Potsdam and Alexander Nicoll in Paris

France has reluctantly dropped its hostility to a merger between British Aerospace and Germany's Daimler-Chrysler Aerospace (Dasa) which would initially exclude Aerospatiale of France.

The French government had been fighting a rearguard action to secure a trilateral merger as the best way to achieve much-needed consolidation of Europe's aircraft and defence industry.

At yesterday's Franco-German summit in Potsdam, France was obliged to accept the argument of Gerhard Schröder, German chancellor, that he could do little to stop two private companies merging.

However, President Jacques Chirac and Lionel Jospin, the French prime minister, warned that bilateral initiatives could destabilise reorganisation of the European defence industry. Paris, London and Bonn together demanded last December a tripartite consolidation of the overcrowded industry. With France resigned to an Anglo-German deal, the stage appears set for the emergence of two competing forces: a merged BAe and Dasa on the one hand, and the French combination, announced in July, of Aerospatiale with the Matra defence interests of France's Lagardère group.

No company is willing to give details of intensive discussions which involve all the big European defence companies – including General Electric Company of the UK and Thomson-CSF of France – and cover a range of options for the cross-border consolidation of the industry, as demanded by their governments.

BAe and Dasa are believed to be close to an accord but are not thought to have agreed on terms. Both have expressed their desire for a three-way deal including Aerospatiale, but are opposed to the France having any significant stake in, or influence over a merged company.

Lagardère, Aerospatiale and other companies are understood to be near a series of agreements – likely to be announced within the next two weeks – that will lead to the creation of Aerospatiale Matra. This will involve the French state reducing its holding to below a majority, and the initial public offering of 20 per cent of the new group in the spring.

French officials believe the greatest efficiencies can be achieved through the creation of a group combining British, French, German and, eventually, other companies. Moves towards privatisation have demonstrated the French government's commitment to this, officials say.

France would want a British/German initiative to be seen as an intermediary step. It would also seek to guarantee the strategic position of Aerospatiale within the Airbus civil aircraft consortium, of which BAe and Dasa between them have 57 per cent.

The respective roles of Aerospatiale and British Aerospace will be a central part of discussions at the Franco-British summit in St Malo tomorrow and Friday.

Tokyo stock exchange system crash halts trading in government bonds

By Julie Hess in Tokyo

The Tokyo stock exchange's attempt to reinforce its position as Asia's largest financial centre took a knock yesterday when its computer system crashed, halting trading in Japan's benchmark government bond contracts.

Hitachi, the electronics conglomerate, has just completed an upgrade of the system aimed at making it more user-friendly.

The failure – the second in a fortnight – is an embarrassment for the stock exchange. The combination of the trading halt and a recent increase in the supply of bonds led to increased volatility and price distortions yesterday. Hedging sales increased as dealers who had bought four-year government notes found it impossible to sell them to investors.

The yield of the benchmark 10-year JGB bond increased by 10 basis points to 1.14 per cent compared with Monday – a large rise compared with the yield two weeks ago of 0.85 per cent.

The system failure caused an immediate sell-off in bonds, but some investors argued the price decline was the beginning of a new trend. Stuart Baker, managing director at Barclays Capital Japan, said: "Given the Japanese fiscal position now and next year, the decrease in bond prices does not come as a surprise."

Mr Baker pointed out that supply had risen recently and that a further increase could be expected in view of the potential rise in government expenditure and falling revenues.

Data released yesterday showed that tax revenues in October had fallen 14 per cent.

On Tuesday, the volume of the 4-year note auction reached Y900bn, much higher than the usual Y400bn to Y600bn.

Following Hitachi's systems upgrade early last month, the stock exchange has been struggling with bond futures transactions. Hitachi has pledged to increase the number of staff assigned to oversee the system, the exchange said.

"Under the guidance of the Tokyo stock exchange, we are working to recheck the futures and options trading system at the earliest possible time in order to improve the quality of the system," Hitachi said in a statement.

Hitachi won the contract to supply the system in competition with several other suppliers, including Fujitsu, Japan's largest computer manufacturer.

Although the system has caused problems since it was introduced, the stock exchange said it had no intention of replacing it in the near future.

The complexity and amount of time it took introduce a new system meant this was not a practical option, the TSE said.

The system was introduced in part to take advantage of a faster processing rate and the ability to view a wider range of more information, the TSE said.

Capital markets, page 28

CONTENTS

Quebec premier Lucien Bouchard is congratulated by aide Bob Dufour as his pro-independence government is re-elected AP

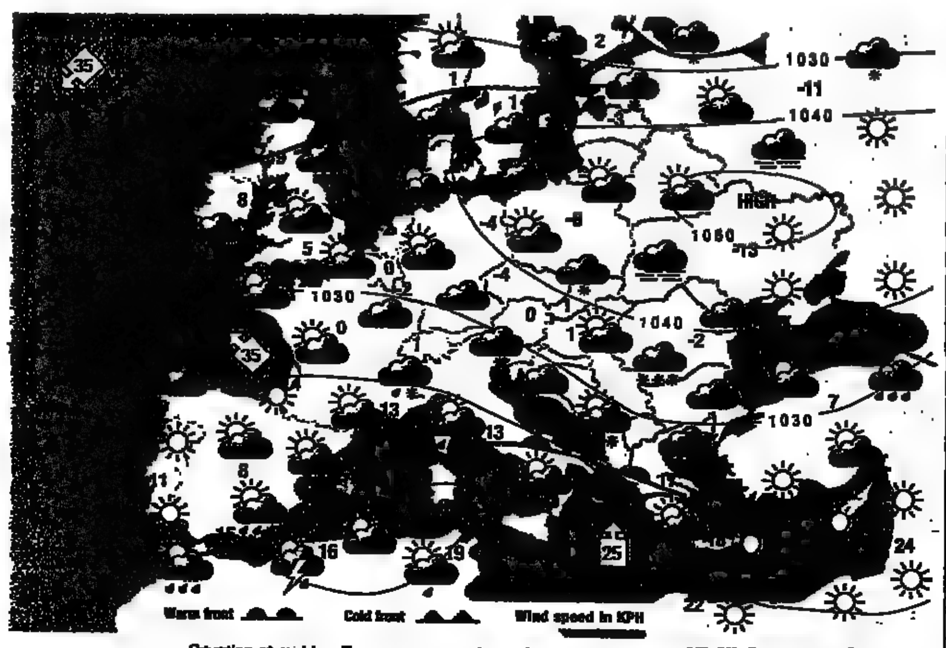
FT WEATHER GUIDE

Europe today

Norway and Sweden will be mild but cloudy and windy with rain or sleet in the north-west. Finland and the northern Baltic States will be blustery with snow flurries. A strong ridge of high pressure will give dry and settled conditions to most of eastern, central and north-western Europe. It will be very cold with frost in many places. Italy, Greece and the Iberian Peninsula will be changeable with showers, with snow likely over the Italian Alps.

Five-day forecast

North-west Europe will stay dry and settled but will be cold with night frosts. Central and eastern Europe will become more unsettled as snow showers become widespread on Friday and Saturday. Scandinavia will turn much colder with severe frost setting in by the weekend. The Mediterranean will be changeable and rather cool.



Situation at midday. Temperatures maximum for day. Forecasts by PA WeatherCentre

TODAY'S TEMPERATURES

		Maximum Celsius
Abu Dhabi	Sun	26
Accra	Fair	32
Algiers	Fair	16
Amsterdam	Sun	-2
Athens	Shower	17
Atlanta	Sun	21
B. Aires	Fair	26
B.ham	Fair	4
Bangkok	Thunder	32
Barcelona	Rain	12
Beijing	Fair	-2
Belfast	Cloudy	9
Belgrade	Shower	2
Berlin	Fair	-4
Bermuda	Fair	24
Bogota	Fair	19
Bombay	Sun	33
Brussels	Fair	0
Budapest	Fair	1
C.hagen	Cloudy	0
Cairo	Sun	23
Caracas	Fair	29
Cardiff	Fair	8
Casablanca	Shower	16
Chicago	Fair	15
Cologne	Fair	-1
Dakar	Sun	29
Dallas	Sun	22
Delhi	Sun	27
Dubai	Sun	29
Dublin	Cloudy	8
Dubrovnik	Shower	12
Edinburgh	Cloudy	8
Faro	Shower	14
Frankfurt	Cloudy	0
Geneva	Cloudy	1
Gibraltar	Shower	14
Glasgow	Fair	9
Hamburg	Fair	-2
Helsinki	Shower	2
Hong Kong	Fair	25
Honolulu	Fair	28
Istanbul	Shower	12
Jakarta	Shower	32
Jersey	Cloudy	3
Johannesburg	Shower	24
Karachi	Sun	31
Kuwait	Sun	30
L. Angeles	Fair	17
Las Palmas	Fair	22
Lima	Fair	23
Lisbon	Sun	11
London	Fair	5
Lux.bourg	Fair	-2
Lyon	Cloudy	1
Madeira	Shower	19
Madrid	Fair	8
Majorca	Rain	13
Malta	Fair	20
Manchester	Fair	7
Manila	Shower	31
Melbourne	Fair	32
Mexico City	Fair	21
Miami	Fair	28
Milan	Shower	7
Montreal	Shower	9
Moscow	Sun	-11
Munich	Cloudy	0
Nairobi	Shower	25
Naples	Shower	15
Nassau	Fair	27
New York	Fair	16
Nice	Fair	13
Nicosia	Fair	22
Oslo	Fair	1
Paris	Fair	0
Perth	Fair	22
Prague	Fair	-4
Rangoon	Fair	[illegible]
Reykjavik	Sleet	3
Rio	Fair	31
Rome	Shower	15
S. Frsco	Shower	16
Seoul	Fair	4
Singapore	Shower	31
Stockholm	Cloudy	1
Strasbourg	Cloudy	-2
Sydney	Sun	23
Tangier	Shower	14
Tel Aviv	Sun	24
Tokyo	Shower	15
Toronto	Fair	13
Vancouver	Shower	7
Venice	Fair	10
Vienna	Snow	0
Warsaw	Fair	-6
Washington	Fair	16
Wellington	Shower	18
Winnipeg	Fair	3
Zurich	Cloudy	-1

INSIDE

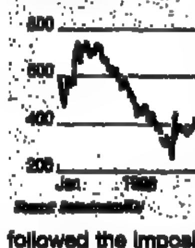
Tanzania's golden opportunity
After decades of false starts, obstructive governments and price uncertainty, Tanzania's vast gold potential stands its best chance of being realised. In a continent where South Africa and Ghana have dominated exploration, optimism is high that east Africa's sleeping giant will offer some fantastic prizes, and that the government will involve foreign investors. **Page 30**

Sterling and dollar in the stocks
Sterling weakened against the D-Mark as sharp drops in the UK equity market spilled over into the currency markets. The pound took its cue from Monday's hefty correction in the Dow to fall against European currencies, the move in turn rebounding on the dollar and pulling it lower against the D-Mark. **Page 29**

Battle of the benchmarks hots up
A new index – Euronia – will step out on January 4 to challenge Eonia as the benchmark for fixing euro overnight indexed swaps. Euronia – Euro overnight index average – was launched by the UK-based Wholesale Markets Brokers' Association. The rival Eonia is being promoted by some 60 banks, mostly from countries within the euro-zone. **Page 28**

Internet lifts stock exchange
The rapid growth in share price internet services for private investors has lifted the London Stock Exchange's income, putting it in a "strong financial position" ahead of its planned alliance with the German bourse. Despite an 8 per cent fall in income from trading following a cut in trading fees, the exchange raised its total income by 8.5 per cent to £76.2m ($125.7m) in the six months to September 30. **Page 25**

False dawn for Malaysian investors



Malaysia's retail investors are giddy with delight about a Kuala Lumpur stock market that has almost doubled in value in three months. Little matter that the rally has been orchestrated in an attempt to enrich a corporate sector hit hard by Asia's financial crisis. The advance has followed the imposition of capital controls and a ban on foreign investors repatriating profits from the sale of shares for a year, which has trapped billions of dollars in Malaysia. **Page 40**

New index for Toronto
The Toronto Stock Exchange and Standard & Poor's were set to announce last night the companies listed on the new S&P/TSE 60, a large capitalisation index expected to become a barometer for Canada's leading securities market. The index, which aims to provide greater international exposure to Canadian companies, is set to be launched on December 31. **Page 21**

COMPANIES IN THIS ISSUE

CROSSWORD, Page 30

MARKET STATISTICS

Hoechst and Rhône-Poulenc begin merger

Biggest life sciences group created

By Graham Bowley and David Pilling in Strasbourg and David Owen in Paris

Hoechst of Germany and Rhône-Poulenc of France yesterday agreed to merge their pharmaceuticals and agro-chemicals businesses to create the world's biggest life sciences company.

The new group, to be called Aventis, will have sales of $20bn and 95,000 employees, making it the world's second-biggest pharmaceuticals group – behind Merck of the US – and the world leader in crop protection and animal health.

The merger will lead to annual cost savings of about $1.2bn by cutting jobs and overlaps, said Jürgen Dormann, Hoechst chairman, and Jean-René Fourtou, Rhône-Poulenc chairman.

Mr Dormann will be chairman of the new group and Mr Fourtou will be vice-chairman.

Both declined to say how many jobs would go, but cuts are likely to be substantial in spite of expected resistance from workers in France and Germany, where about 40 per cent of the new group's employees are based.

The company will have headquarters in Strasbourg in France and will be incorporated under French law. It will immediately report in euros.

Yesterday's announcement marks the first stage of a two-stage merger that will end in a full-scale link-up between Hoechst and Rhône-Poulenc within three years.

During that period both groups will sell off their remaining non-life sciences assets. For Hoechst, this means the disposal of interests in industrial gases group Messer, Wacker Chemicals and Clariant, the specialty chemical group. Rhône-Poulenc will sell the remainder of Rhodia, its specialty chemicals business. After the disposals, Hoechst and Rhône-Poulenc will be folded into Aventis.

Aventis will be run by a four-man management board. As well as Mr Dormann and Mr Fourtou this will comprise Igor Landau from Rhône-Poulenc, who will have special responsibility for pharmaceuticals, and Hoechst's Horst Waesche, who will oversee the agricultural business.

Aventis will have a 10-member supervisory board headed by Marc Viénot, the French banker. There will be no unions represented on the supervisory board, marking a break with German tradition.

Executives said the merger would give both companies added sales and marketing muscle and beef up their R&D capabilities. They emphasised that Aventis would make expansion in the US a priority.

Yesterday's deal may not be the only big pharmaceuticals merger involving a French company this week. There is strong speculation that Sanofi and Synthélabo, the second and third biggest French drugs groups, are poised to announce a tie-up in a deal expected to exclude Sanofi's beauty products unit.

Observer, Page 17; Lex, Page 18; Analysis, Page 24

Forward together: Rhône-Poulenc chairman Jean-René Fourtou (left) with Hoechst chairman Jürgen Dormann

Dow Jones says losses at CNBC may go on until 2002

By John Gapper, Media Editor

Losses at the international operations of CNBC, the television news channel specialising in financial markets, are likely to continue for two years longer than projected because of the Asian economic crisis.

Dow Jones & Co, the financial publishing group that holds 50 per cent of CNBC's operations in Europe and the US, believes that the operations will only break even in 2002, rather than the turn of the century.

Peter Kann, chairman of Dow Jones, which publishes the Wall Street Journal, said in an interview the expectation that CNBC would break even internationally by 2000 "may stretch a year or two".

Dow Jones last year merged its international television arm with that of CNBC, a cable network owned by General Electric. As part of the deal Dow Jones gains licensing revenues and a share of revenues from CNBC in the US.

The deal led to Financial Times Television losing its programming contract with CNBC in Europe. It enabled the US companies to cut joint losses on international television from about $100m last year to about $50m this year.

Losses are expected to halve again in the coming year. Mr Kann said the two partners would "almost certainly create market-leading channels" in Europe and Asia, and losses had been contained at an acceptable level.

Mr Kann said Dow Jones had demonstrated that its television operations were of value to investors. "We accomplished what we set out to do, although there have been some detours and difficulties."

Because Dow Jones gains licensing and advertising revenue from CNBC in the US, it has US television earnings with which to offset its international losses. This should allow it to break even in television overall by 2001.

Dow Jones has been concentrating on its Dow Jones newswire and electronic publishing since selling Dow Jones Markets, its loss-making real-time financial data service, for $510m this year.

A new leaf, Page 21

Nomura seeks IPO of $1.4bn UK pub chain

By David Blackwell and John Willman

Nomura International, the Japanese investment bank that became the UK's largest pub landlord last year, is to put most of its pubs into a company that will seek a stock market quote in three years.

Unique Pub Company will have 2,600 tenanted pubs with assets of £850m ($1.4bn) and profits before interest this year of £80m-£85m. Its managers expect the initial public offering to value it at £1bn, putting it in the FTSE 250 and making it a target for index-trackers.

"Aiming to float [list] in 2001 is a realistic timescale," said Giles Thorley, Unique's chief executive. "We are not in a hurry. In any case, it would be inappropriate now given the market volatility."

Nomura will be left holding 1,100 pubs from the Inntrepreneur and Spring Inn estates. They include several hundred with tenants in dispute over their leases in a saga Nomura inherited from the previous owners, Grand Metropolitan and Foster's, the Australian brewing group. The sale of many remaining pubs is almost impossible pending court hearings.

The new company will be the UK's largest tenanted pub group. The IPO will allow Nomura to sell its stake, and the company to adjust its gearing. Mr Thorley said it had no plans for further acquisitions, though it might be interested in smaller managed houses that brewers and other operators no longer wanted.

All the Unique tenants have signed up for a new supply agreement introduced in March to replace the previous tie to Scottish Courage, the brewing arm of Scottish & Newcastle. The Supplyline agreement allows licensees to choose from 140 products produced by 28 suppliers including 20 regional brewers.

This means Unique will get its income from rents paid by tenants and by taking a cut from the discounts negotiated on beer with the brewers.

Brewers call time, Page 26

JAPANESE CONSTRUCTION GROUP'S FAILURE FUELS SECTOR FEARS

JDC seeks bankruptcy protection owing $3.3bn

By Alexandra Harney in Tokyo

Worries about the crisis in Japan's construction sector intensified following the collapse of JDC, a medium-size contractor heavily involved in golf courses.

JDC filed for protection from its creditors with Y406.72bn ($3.3bn) in liabilities. It was the second largest bankruptcy by a Japanese construction company since the second world war, after Tokai Kogyo which collapsed with Y511bn in liabilities in July 1997, according to Teikoku Databank, a credit research agency.

The sector has been hit by a collapse in land prices and the contraction in construction demand as a result of the Japanese recession. The turmoil in Japan's financial sector has also had an impact on the country's construction companies, frustrating attempts to clean up balance sheets.

Taichi Sakaiya, Japan's economic planning agency minister, said: "I think they [construction bankruptcies] will increase somewhat."

Kokudo Doro, a subsidiary of JDC, yesterday also filed for protection according to Japanese bankruptcy law. It did not reveal its total outstanding liabilities, but Teikoku Databank estimated its debts at Y16.84bn.

JDC said mounting debts from large projects – golf courses in particular – and affiliated companies' failed property investments had forced it to apply for legal protection from its creditors. The Tokyo-based contractor had Y117.78 in financial obligations, Y77.22bn in debt guarantees, and Y57bn in corporate bonds, as well as Y151bn in hidden capital losses.

"We have considered various schemes and combinations over the past year and a half, including a debt-forgiveness plan ... But in our final negotiations with creditors, the debt was too large," said Ichiro Komiya, vice-president.

But JDC said its main bank had not withdrawn support.

The group's main funding sources include Mitsui Trust and Banking, which holds a 4.2 per cent stake, Tokai Bank and Asahi Bank. Mitsui Trust said that it did not expect to recover Y25.1bn of the Y30bn in outstanding loans to JDC but that the loss would not affect its earnings in the year ending next March. Tokai Bank said it was uncertain whether its Y36.3bn outstanding loans would be repaid.

Trading in JDC was suspended, but the stock closed at Y55 the day before. Shares in Mitsui Trust tumbled 6.1 per cent, or Y10, to Y155, while Tokai Bank gained Y4 to Y527. Construction stocks overall slid 1.19 per cent.

Future from the rubble, Page 20

BARRY RILEY

Weighing up the risks

Ever so cautiously the WM Company, the UK's leading investment performance measurement consultancy for pension funds, is rolling out a risk measurement service.

Americans might ask why it has taken the UK so long. Lucky British pension fund trustees have until now been largely sheltered from the jargon of active risk, information ratios and interquartile risk ranges, even though such concepts have already been widely adopted by fund managers.

The generalist approach (I will not call it amateur) to the staffing of trustee boards in the UK has been an obstacle. Risk analysis, WM apologises in its introductory brochure, is "too mathematical, too esoteric".

Investment professionals would mostly lap the subject up, but WM is clearly worried about baffling and alienating its clients.

Incidentally, the other UK measurement specialist, Caps, is also exploring risk, probably on a rather more ambitious and detailed basis, through Risk Reporting, a joint venture with Barra, the California-based risk modelling consultants.

For its part, WM has collaborated with the Edinburgh risk consultants Barrie & Hibbert.

WM is not going so far as to devise risk-adjusted returns. They might be volatile, and anyway are too controversial for fund managers. It is focusing on relative risk, so that trustees can understand their overall level of risk against their benchmarks.

Within that, the risk is allocated across different asset classes. An analysis of "prospective risk" compares a fund's risk with that of the relevant WM universe of similar funds, and splits it between policy (or asset allocation) and stock selection.

One basic question is whether the amount of risk is appropriate in the context of performance targets.

The median total fund risk in the WM50 Universe of the biggest funds seems to be quite modest, at about 1.5 per cent, this being the standard deviation of the individual's relative return against the universe.

Policy risks are quite high, because of customised benchmarks, but stock selection risks are low, probably because of reliance on indexation.

Smaller funds in the WM2000 Universe often run lower policy risks, because of pressures to run with the herd. Stock selection risks in these smaller funds are higher, but in aggregate the interquartile range (from the 25th to 75th quartile) is more tightly bunched, and the median total risk is perhaps 1.4 per cent.

Arguably the range is too narrow. If a manager has been set an objective to beat the benchmark by 1 per cent a year then the relative risk should be at least 2 per cent. This is because it is unreasonable to assume an information ratio of more than 0.5, the latter ratio being defined as the relative return against the benchmark divided by the standard deviation of this relative return. It measures the manager's skill in adding value.

When informed about the risks the trustees can be more effective at monitoring. It is interesting to speculate about trustee behaviour over the past few years had they realised that increasing risks were often being incurred by leading external managers like Gartmore and Phillips & Drew, and even Mercury.

These three managers have together lost mandates worth £9bn net over the past twelve months, while index trackers have won £8bn. Now, it is said, there is a risk-averse retreat to the benchmarks that will soon show up in the risk data.

The assessment of risks will be a challenge for generalist trustees. Risks cannot simply be added together, partly because of correlations.

And there may be much more risk in, say, a small allocation to the Pacific ex-Japan region, as managers discovered in 1997, than in a much bigger divergence from the benchmark allocations between UK equities and UK bonds, which are more highly correlated.

So risk has finally arrived. Or rather, it was here all the time. Ignorance was bliss.

JAPAN CHOICE OF CHUO TRUST AS PARTNER SURPRISES ANALYSTS

Nippon Credit Bank plans merger talks

By Paul Abrahams in Tokyo

Nippon Credit Bank, the troubled Japanese bank, yesterday said it was intending to open negotiations with Chuo Trust, the long-term credit bank, about a possible merger. However, it insisted an agreement had not been reached.

A merger would come as no surprise, given NCB's financial weakness and the increasing competition created by Tokyo's "big bang" reforms. But the choice of Chuo Trust as a partner surprised analysts yesterday.

"This would be very strange. You would be putting two wholesale banks together which are undercapitalised at a time when the days of wholesale banking are drawing to a close," said Brian Waterhouse, financial analyst at HSBC Securities.

Trading in the banks' shares was temporarily halted during morning trading. In the afternoon, Chuo Trust fell 0.9 per cent to Y535, while NCB was unchanged at Y174.

NCB is burdened by huge bad or doubtful loans. The Financial Supervisory Agency, the banking watchdog, is expected to show that NCB has outstanding loans worth Y3,200bn ($26bn) to borrowers in default, in corporate difficulties or which require careful monitoring. The group expects to write off Y735bn of bad debts during the current year. It has predicted parent company pre-tax losses of Y100bn in the year ending March 31.

Chuo, which is predicting pre-tax profits of Y20bn for the full year, has 52 branches – about the same as Mitsubishi Trust, but only a quarter of the revenues.

Analysts said cost synergies from a merger were unlikely because of the reluctance of Japanese organisations to cut costs.

However, NCB and Chuo, which are facing pressure on their capital adequacy ratios, could ask for additional funds from the government which has set aside Y60,000bn to bail out the banking system.

Analysts said the combined groups would have revenues of Y295bn and insufficient scale to invest in necessary information technology. "Frankly, the combination would be sub-scale and makes as much sense as the tie-up between Sumitomo Trust and Long-Term Credit Bank, before the latter was nationalised. If Chuo and NCB then linked up with a big city bank, then it might all make sense," said Mr Waterhouse.

Chuo has traditionally had close ties to Tokai Bank and Asahi Bank.

Japan's contractors try to build future from the rubble

JDC was small enough to fall through the net but its fate reflects industry restructuring, writes **Alexandra Harney**

The failure of JDC, the Japanese construction company, yesterday gave an ominous indication of how the turmoil in the banking system is spreading to the enfeebled construction industry.

As Japanese banks struggle with staggering levels of bad and problem loans in their portfolios, contractors and builders are facing sharply lower demand and mounting losses on property and equity holdings and from unprofitable projects.

Coming together, analysts argue, this means there are more bankruptcies on the horizon for Japan's construction industry.

JDC's failure comes only weeks after Aoki, a second-tier contractor, asked its creditor banks to forgive loans worth Y200bn ($1.6bn) as part of a restructuring effort.

The potential consequences for the Japanese economy, which is already mired in its worst post-war recession, are severe.

The construction sector accounts for about 10 per cent of the total workforce, and with the unemployment rate already at a record 4.3 per cent, massive job losses would have a devastating impact on consumer demand and the economy as a whole.

Banks are caught in a difficult position – not only financially, but also politically and socially.

While the social implications of bankruptcies are clear, the liquidity crisis in the financial sector has forced banks to tighten their lending standards recently.

To make matters worse, construction companies have historically enjoyed generous backing from Japanese politicians, who use public works spending to stimulate economic growth.

These pressures on the banks have helped prevent the failure of larger construction groups so far, analysts argued.

JDC's workforce of 1,725 people and turnover of about Y300bn are a fraction of the size of the biggest companies in the industry, such as Obayashi, Taisei, Shimizu, and Kajima, which employ over 10,000 people each.

The smaller companies do not enjoy the political connections and wield the corporate clout of the construction giants and, as a result, they are less likely to convince creditors to agree to a debt forgiveness scheme, analysts say.

"JDC was an example of a company that was small enough to fall," says Mark Brown, construction analyst at ING Barings.

The company's problems centred around its aggressive expansion into golf courses in the 1980s and early 1990s and its management's inability to restructure once these businesses became unprofitable after the bubble burst, analysts say.

JDC, like many others, began to use developers to build golf courses when demand for golf club memberships in Japan surged in the 1980s.

However, developers often used membership dues to cover construction costs, so when golf course membership prices plummeted in the early 1990s, developers were unable to meet their financial obligations.

This forced construction companies to absorb both the development companies, which had borrowed heavily to finance their operations, and the golf course properties.

This loaded construction companies' balance sheets with liabilities.

Mr Brown estimates that JDC's net gearing at March 1998 was 440 per cent, well above the 227 per cent average gearing ratio of 25 other contractors.

Analysts said the group's attempts to lighten its debt burden over the past 18 months were inadequate, and ultimately its loss of credibility with creditors as well as other companies had left it no choice but to file for legal protection.

Akihiro Tsujioka, JDC president, said the decision was made at a board meeting in the early hours yesterday morning.

JDC shares would be delisted in March 1999, the Tokyo Stock Exchange said yesterday.

Although most of the management is expected to resign, JDC executives and Kazuhiro Murata, their lawyer, said they had great expectations for the company's growth after its reorganisation.

"I believe it will definitely be rebuilt... and I am almost jealous of what it will become," says Mr Tsujioka.

Akihiro Tsujioka: 'I am almost jealous of what it will become' AP

Ford aims for 10% of sales in Asia

By Alexandra Harney in Tokyo

Ford aims to corner 10 per cent of car sales in the Asia-Pacific region within 10 years by expanding in China, Japan, Thailand and India, the US car and truck group said yesterday.

It currently has about 1 per cent of region's car market.

Wayne Booker, Ford vice-chairman, called the current financial crisis "a window of opportunity" and said he expected "long-term sustainable growth" in the region despite the sales collapse this year.

Sales in most countries in the region, including Japan, were 50 per cent down on last year's level as a result of the financial turmoil, he said.

Ford is to revamp its operations in Japan by adjusting its product mix and moving sales outlets to more populated areas.

Ford also planned to launch a car in late 1999 with Mazda, the Japanese carmaker in which it owns a 33.3 per cent stake.

Mr Booker declined to comment on the collaboration with Mazda, except to say that the groups were considering common platforms and other types of integration to avoid product duplication and allocate company resources more efficiently.

In the Japanese market, the group recognised the overwhelming dominance of domestic manufacturers. Ford would "not challenge Toyota – it has 40 per cent of the market".

"If we have a few percentage points that will be good enough for us", he said.

Ford has been increasing its investments in Asia in recent years.

In July, it began production of the Ranger, a pick-up truck, at its factory in Rayong, Thailand.

It is also building a car plant in India and assembly facilities in the Philippines, both of which are expected to go on line next year.

Ford is also trying to increase its share in a joint venture in China with Jiangling Motors, a local group.

However, it has met considerable difficulties, particularly after the failure of its bid for Kia, the Korean carmaker, which filed for bankruptcy last October.

Hyundai completes takeover of Kia

By John Burton in Seoul

Hyundai Motor, South Korea's largest carmaker, yesterday completed its takeover of the bankrupt Kia vehicle group in a Won1,180bn ($947m) deal for a 51 per cent stake.

The acquisition will expand Hyundai's domestic market share to between 65 per cent and 70 per cent and make it the world's 10th largest carmaker, with a capacity of 2.5m vehicles, ahead of Daewoo Motor and Samsung Motors, its Korean competitors.

Hyundai, which won an *international auction for the* group in October, will pay Won841.5bn for Kia Motors and Won336.6bn for Asia Motors, Kia's commercial vehicle subsidiary, to creditor banks by next March.

In addition, it will pay Won1,700bn in debt owed by Kia to creditor banks by 2008 and must assume Won4,700bn in other liabilities, mainly owed to Kia's subcontractors. Kia's creditors last week agreed to write off Won7,390bn of Kia's debt principal.

Five Hyundai companies will pay for Kia, with Hyundai Motor responsible for 40 per cent of the purchase price, Hyundai Heavy Industries 20 per cent, Hyundai Industry Development and Construction 15 per cent, Inchon Iron & Steel 15 per cent, and Hyundai Financial Services 10 per cent.

Chung Mong-gyu, the Hyundai Motor chairman, said business normalisation plans for Kia will be unveiled soon. Analysts expect this to include wage and job cuts and consolidation of suppliers.

Kia, which halted production last week because of a sharp fall in car sales, resumed operations yesterday after the takeover deal was concluded.

Hyundai will also seek foreign investors for Kia, including Ford Motor of the US, which was Kia's biggest shareholder until its takeover by Hyundai. But analysts are sceptical whether foreign carmakers will be interested in acquiring a minority stake in Kia.

NZ set to privatise electricity generator

By Terry Hall in Wellington

The New Zealand government plans to sell Contact Energy, the country's second biggest electricity generator, in a public flotation that could realise more than NZ$2bn ($1.1bn), making it the biggest state-owned asset to be sold this way.

The float, which is likely to be scheduled just before the general elections, is designed to capitalise on a series of offerings in recent months that have proved extremely popular with small investors.

The government is seeking commercial advisers for the sale of Contact, which produces 27 per cent of the country's electricity.

It plans to sell 60 per cent through a share issue to the public and 40 per cent to what it termed a "cornerstone" shareholder who would provide expertise to the company to the benefit of all investors.

ABN Amro predicted strong interest in Contact shares from the investment community and the public.

The bank valued Contact's assets at NZ$1.57bn, including government equity of NZ$883.8 million. It had operating earnings of NZ$153.5m in the year to September 30.

However, ABN Amro said the company's future earnings prospects could be limited by greater competition in the energy sector after the government split ECNZ, its other electricity company, into three divisions and because of increasing private enterprise involvements.

The government recently sold its 51.6 per cent shareholding in the Auckland International Airport for NZ$400m and last week's float of government-owned office blocks in Wellington raised NZ$120m.

NEWS DIGEST

SEMICONDUCTORS

AIG and Ericsson unit to buy 80% of Alphatec

American International Group and an investment subsidiary of Sweden's Ericsson have agreed to pay $40m for an 80 per cent stake in Alphatec Electronics, the Thai computer chip maker. The deal is subject to creditors' approval of a restructuring plan that calls for more than two-thirds of Alphatec's debt to be written off.

The capital injection and debt restructuring were unveiled yesterday at a creditors' meeting. Some creditors, Krung Thai Bank among them, asked for amendments and the meeting was adjourned until December 8, when creditors must vote on the proposal.

Alphatec is the first Thai company to attempt a reorganisation under the country's new bankruptcy law. It has about $373m in unpaid debt and PricewaterhouseCoopers, the debt restructuring planner, said that without a creditors' agreement, the group would run out of money at the end of the month and could cease operations.
Ted Bardacke, Bangkok

COMPUTERS

Acer sees January GDR issue

Acer, the Taiwanese computer maker, said yesterday it expected to issue its long-planned global depositary receipts in January following the improvement in market conditions. At yesterday's closing price of T$42.50, the issue would raise up to T$8.5bn (US$262m). Its shares hit a year-low of T$28.80 on September 1.

"Now that the market has stabilised, with Taiwan's government adopting a bullish attitude and investor confidence returning, we feel it is a better time to launch the GDRs in January," said Lee Yipin, corporate finance and investment management director.

In May, Acer's shareholders' meeting authorised its board to issue up to 200m shares in GDRs in 1998. Mr Lee said the funds raised would be used for working capital, especially for Acer's many overseas operations. Pricing of the GDRs would be decided after a series of roadshows in the leading financial centres in January. The co-lead underwriters will be ABN Amro Bank and Nomura Securities.

Mr Lee said Acer's business outlook was improving, although he did not go into details.

Analysts said slowly improving semiconductor prices would narrow losses for its Acer Semiconductor Manufacturing unit, which is expected to report a T$5bn loss in 1998. **Reuters, Taipei**

NEW ZEALAND

Brierley rejects Disney offer

Brierley Investments yesterday rejected a revised offer from Disney family interests, which were seeking a management and equity relationship with the international group. Brierley directors said the offer was "not desirable or necessary" in view of the Brierley's improved financial position and its dilutionary impact on its capital structure.

Shamrock Capital Advisers, a US investment company for Disney family interests, holds 2 per cent of Brierley.

Shamrock attacked Brierley directors over the use of the term "lack of cultural fit". Mr Gold said this was simply a code word for prejudice towards foreigners and was inappropriate for a company with 75 per cent of its assets outside New Zealand. **Terry Hall, Wellington**

MACHINERY

Taichung wins loan extension

Taichung Machinery has been granted a six-month extension of its expiring loans, approval of new loans worth T$250m (US$7.7m) and continued access to T$2.2bn in revolving credit, the finance ministry said yesterday.

Taichung is the first listed company to be granted such relief by the state-led crisis relief panel, which was formed by the finance ministry and central bank during a spate of corporate stock payment defaults that shook Taiwan's stock market in early November.

The panel, which includes leading creditor banks, granted a six-month extension of expiring loans or approved new loans for four smaller unlisted firms a week ago, but declined to identify them. **Reuters, Taipei**

SECURITIES

DKB Securities

Dai-Ichi Kangyo Bank has asked it to be made clear that a story in the Financial Times on December 1 under the headline "DKB Securities forced to suspend operations" refers to Dresdner Kleinwort Benson Securities, not to DKB Securities or any other part of the Dai-Ichi Kangyo Bank group.

CANADA COMPANIES SELECTED

TSE, S&P set to launch new index

By Scott Morrison in Toronto

The Toronto Stock Exchange and Standard & Poor's were preparing yesterday to announce the companies listed on the new S&P/TSE 60, a large capitalisation index that is expected to be a barometer for Canada's leading securities market.

The index, which will be part of S&P's global basket of investable indices, aims to provide greater international exposure to Canadian companies and enhance liquidity. It is set to be launched on December 31.

Richard Carleton, TSE vice-president of index and market data services, said the TSE 60 would be the basis for futures and options instruments, as well as index participation units. The TSE and S&P were also considering sector-related units – for example, natural resources – based on S&P's global index.

The new index initiative is part of the TSE's strategy to increase market liquidity and fend off competition from US stock markets.

It is the first product to emerge from a partnership announced this year between the exchange and S&P, which manages the widely followed US benchmark index, the S&P 500. Mr Carleton said the partnership enables the TSE to leverage S&P's international exposure to market Canadian companies to global investors.

Bill Riedl, president of Fairvest Securities, said inclusion in the TSE 60 would be important to companies, given the growing interest in index investment funds by pension funds and other institutions. "A large percentage of investment capital will be strictly focused on that group," he said.

The TSE 60, designed to be a large market capitalisation portfolio index, will feature companies selected on liquidity, sector leadership, share float and fundamentals such as earnings performance and debt to equity ratio.

Investors have for several weeks been taking positions in anticipation of the new index, hoping to reap a listings premium or avoid a discount to a company's share price if it is not included.

Dealers said it was impossible to calculate the size of the premium, or discount, given that position-taking prior to yesterday's announcement was likely to reduce the impact.

Mr Carleton said the TSE 35 and the TSE 100 would continue to be calculated due to demand from investors holding a number of derivative instruments tied to the indices, such as equity side deals and other over-the-counter instruments with fixed terms.

Strict budget for state oil group

By Raymond Colitt in Caracas

Venezuela's general assembly is today set to approve a strict budget for Petróleos de Venezuela, the state oil company, with only minimum investments to maintain current production capacity.

The budget proposal allows about $8bn in operational costs and $4bn in capital investment, of which an estimated $2.6bn would go to maintain current production capacity.

"There will be no expansion of capacity next year. It's an austerity budget," said one person in the industry familiar with the budget proposal. "Given the oil price and the country's fiscal situation, there is no money to spare."

For 1999, PDVSA foresees an average production of 3.17m barrels a day. That is slightly up from this year's average of 3m b/d, but far below the 3.8m b/d the company had originally predicted for the end of this year. PDVSA expects an average price of $11.50 for the Venezuelan basket of crude oils, but "may revise this figure downward" the source said.

PDVSA has been hit hard this year. It has made production cuts of 525,000 b/d under an agreement with leading oil-producing nations in an attempt to stem the fall in prices. PDVSA has also had to pay additional dividends to help finance the government's budget deficit, bringing its total fiscal payments to $7.45bn in 1998. Some observers question whether PDVSA will be able to pay Bs1,000bn in dividends next year, as stipulated in the government's 1999 budget.

Expenditure and production cuts from the collapse of oil prices hit not only next year's output but also PDVSA's long-term expansion plans. The company now expects to reach production capacity of 5.2m b/d in 2006, rather than the forecast 6.2m b/d in 2007.

NEWS DIGEST

MAGNETS

Bogatin resigns as YBM Magnex president

The president and chief executive of YBM Magnex International, the troubled Canadian magnet maker under police investigation, has resigned. YBM said late on Monday that Jacob Bogatin, who headed the company since it first began trading in Canada in 1994, had also resigned as a director. Wesley Voorheis, YBM chairman, declined to comment on the resignation and Mr Bogatin did not return calls seeking comment.

YBM has been suspended from trading on the Toronto Stock Exchange since last May, when its Pennsylvania headquarters was raided by the FBI in a police investigation of alleged money laundering activities.

YBM's institutional investors, headed by Mr Voorheis, ousted the company's board of directors in September. The new chairman promised he would quickly get to the bottom of the controversies plaguing the company so it could resume trading.

But Mr Voorheis has said nothing about the company's future since that time, and investigations by police and securities regulators are continuing.
Edward Alden, Toronto

FINANCIAL STABILITY INSTITUTE

First chairman appointed

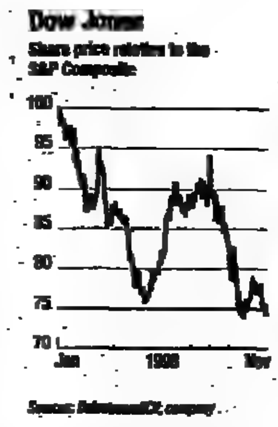
John Heimann, chairman of global financial institutions and a member of the executive management committee of Merrill Lynch, will retire on February 1 to take up a position as the first chairman of the Financial Stability Institute.

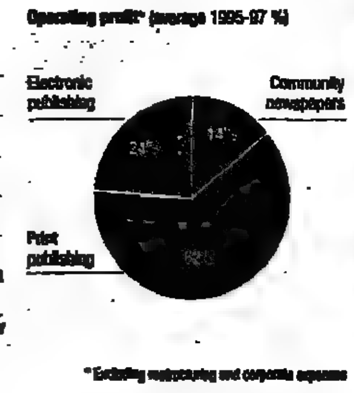
The institute was established by the Bank for International Settlements earlier this year to promote better and more independent supervision of the banking, capital markets and insurance industries. It is a joint initiative of the BIS and the Basle committee on banking supervision.

William McDonough, president of the Federal Reserve Bank of New York and chairman of the Basle Committee said: "As a respected former regulator and a senior executive of a major financial institution, [Mr Heimann] has extensive knowledge of both supervisory challenges and financial market practices." Tracy Corrigan, New York

Turning over a new leaf

Publisher Dow Jones plans to build on the strengths of the Wall Street Journal after a tough year, writes **John Gapper**





* Excluding restructuring and corporate expenses

Peter Kann, chairman and chief executive officer of Dow Jones and Company

For Peter Kann, chairman and chief executive of Dow Jones & Co, publisher of the Wall Street Journal, the past few weeks have provided some grounds for optimism towards the end of a difficult year.

Despite the dominance of the Wall Street Journal in US financial markets, and some successful initiatives such as the Interactive Edition of the Journal, the previous months were a struggle.

Ownership of the loss-making Dow Jones Markets real-time financial information group depressed its shares early in the year, and provoked criticism from some dissident members of the controlling Bancroft family. There was a temporary respite after the company succumbed to pressure and sold Dow Jones Markets for $510m in May, but this lasted only until the summer. Then fears of a recession in advertising caused renewed weakness.

Mr Kann's strategy of trying to close the book on the past and looking towards a future in which Dow Jones replicates its newspaper strengths in other fields was put to analysts late last month. His presentation followed the announcement of the early retirement of Kenneth Burenga, president of the company and chief executive of Dow Jones Markets, and plans for the repurchase of $500m of the company's shares.

Mr Kann, a former editor and reporter who has had to defend his abilities as a business executive, has learned a lesson in humility from his troubles. "The management has a high degree of self-imposed pressure to do better," he says.

His presentation laid out a three-year plan to expand Dow Jones' electronic publishing businesses, and improve margins in operations such as Ottaway, which publishes 36 community newspapers.

Family control of Dow Jones has given Mr Kann at least one comparative advantage in laying long-term plans for the group. Despite vocal criticism from two family members, he believes the Bancrofts have little interest in selling.

Despite occasional rumours about a possible sale or merger, Dow Jones appears set in its ways. "Even the critical members of the family were not trying to sell the company, and we are not going to sell the company, or merge," he says.

In a sense, Dow Jones has been a victim of its own success. The dominance of the Journal – a competitor of the Financial Times – in the US has made it hard to find another related activity that can produce comparable profits.

Dow Jones Markets was a failure and the company has lagged behind in areas such as marketing its stock market indices. It is now focusing more strongly on electronic publishing, both in newswires and specialist information.

The fastest-growing operations are the Interactive Edition of the Journal, which has 250,000 paying subscribers on the internet, and Dow Jones Interactive, an online business information division that reaches 600,000 users via terminals.

Mr Kann insists there is little risk of these kinds of publishing operations falling into the same trap as Dow Jones Markets, which proved less nimble than competitors such as Bloomberg.

"The core of this content is proprietary, and we're serving the same kind of market we serve with our print papers. It is a business we have a fair amount of experience in, and have been reasonably successful at."

The company is still finding its way with the Interactive Edition of the Journal, since it is among the first publishers to charge for access to a newspaper on the internet. The subscription charge is still well below the price of the printed Journal, which costs $175 a year.

The Interactive Journal costs print subscribers $29 a year, and others $59. "Over time, it is our goal to bring the rates close to print. We want to say that our information has value," Mr Kann said.

Dow Jones is also distributing the Journal's content over television via a joint venture with CNBC – the cable network owned by NBC. It licenses information to CNBC, and gains a share of CNBC's additional advertising revenue.

As part of the same agreement, Dow Jones and NBC combined their loss-making international television operations, which have been hit by Asian turmoil and are together likely to lose about $50m this year.

"A year ago, our television side was viewed as something of a problem, but I don't think it is seen that way any more. It is quite significantly profitable in the US, and we are reducing overseas losses," he says.

But as Dow Jones' experience since late August shows, none of these other ventures matters as much to its share price as advertising in the Journal. Shares dropped from $58 in late July to $42 in mid-October on signs of weakness.

The sale of Dow Jones Markets has made it more vulnerable to the advertising cycle by reducing subscription revenues.

However, Mr Kann insists the strength of the Journal protects it somewhat from the cycle.

"Even if you assume there is a recession, well OK, who does best and who comes out in the best shape? If there is a down market and customers cut back a bit, we'll do well in that kind of environment."

MERGERS: THE COMPETITIVE LANDSCAPE OF THE SECTOR HAS BEEN CHANGED

Exxon, Total deals turn up peer pressure

Confirmation of Exxon and Mobil's $75bn deal and the takeover of PetroFina of Belgium by French group Total has shaken the world oil industry. Financial Times writers analyse the details and examine the prospects for the industry

By Robert Corzine

The herd mentality runs deep through the world's oil industry, so it was perhaps no surprise that two of the three merger/takeovers to occur in the integrated petroleum sector in more than a decade were announced on the same day.

Although each of the companies involved in the wave of restructuring seen so far – BP Amoco, Exxon Mobil and Total Fina – have been uniformly effusive about their prospects, the recent history of the sector shows that oil companies have also been consistently "more comfortable making mistakes with others", as one European oilman wryly noted this week.

But irrespective of whether the deals concluded live up to their billing, there is little doubt that they will alter the competitive landscape of the industry.

For those companies that have yet to take the plunge, there will be growing pressure to make a move.

Part of that pressure will be external. Investors and analysts will want to know whether managements have assessed the pros and cons of mergers and takeovers in light of such a rapid and fundamental shift in industry sentiment.

Shareholders may also worry that companies could be too late in jumping on the merger bandwagon. Analysts say there are clear advantages for those who move early, especially as the dominant partner can focus on the company that best fits its strategic commercial and financial aims. The BP Amoco deal was welcomed in large part because the industrial logic, and the potential savings, were clear from the start.

The fact that some analysts were yesterday questioning several aspects of the Total Fina deal – especially because it takes Total, the lead company, into areas such as base chemicals and US refining and marketing which it had previously rejected – suggests it may grow harder for companies to find arguments about industrial logic at the end of the merger wave with which to impress shareholders.

With each announcement there are also fewer combinations remaining, making it more difficult for the managements involved to argue that any proposed link-up is a "dream combination".

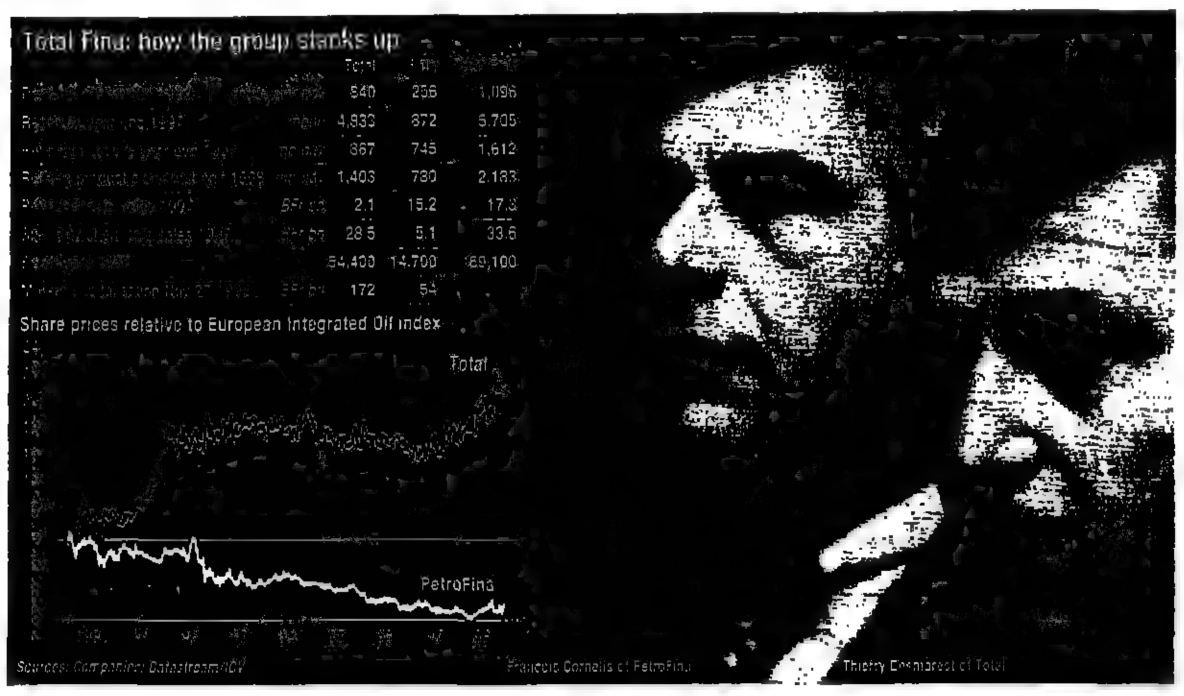
There is even a danger that, in the frenzied atmosphere, some managements may consider deals that in more placid times would have been pushed aside.

Raised expectations can also complicate the conduct of more routine business. Although there would always have been questions asked about the decision this week by Royal Dutch/Shell and Texaco of the US to drop plans to merge their European refining and marketing networks, the timing of the announcement created a swirl of speculation over whether it signalled that Shell was poised to strike on a much bigger scale.

But the Anglo-Dutch group looks set to stick to its avowed policy of pursuing more limited geographic or market-segment joint ventures, while it considers long-promised, radical changes to its asset base.

The merger wave may also divert the attention of executives in companies that are "not yet in the mood", according to one executive. Elf Aquitaine, the other big French oil group that had been in the bidding for PetroFina, reminded key staff in the wake of the Total Fina deal that mergers were not the only way to develop the business, and that factors such as price and industrial fit would be decisive elements in any of its deals.

But for the time being, it is unlikely that any big oil company can pretend that it is merely business as usual. The industry is transfixed by consolidation, and is likely to remain that way as long as oil prices stay depressed.



Sources: Companies; Datastream/ICV · François Cornélis of PetroFina · Thierry Desmarest of Total

PETROFINA ALLIANCE WILL CREATE EUROPE'S THIRD-BIGGEST OIL COMPANY

Questions arise over cost

By Neil Buckley in Brussels and David Owen in Paris

Total's takeover of PetroFina will create the world's sixth-biggest oil company, and the third biggest in Europe, with combined market capitalisation of almost $46bn.

It will, in the words of Thierry Desmarest, Total chairman, create a "new European oil major" with combined sales last year of almost $54bn, 69,100 employees and reserves of 5.71bn barrels of oil equivalent.

But not everyone was rejoicing yesterday. Shares in Total fell 12.3 per cent from FFr705 to FFr618 amid fears it was paying too much for the Belgian company.

"The premium is fantastic for PetroFina shareholders" said Philippe Cantelaube, oil analyst with Crédit Lyonnais Securities.

Based on Total's closing share price last Friday, its nine-for-two share swap offer valued PetroFina at BFr19,482 per share, or BFr456bn ($13.07bn) – a 36.7 per cent premium to Friday's closing price of BFr14,250.

That was well above analysts' estimates of BFr18,000 on Monday – suggesting that Total did indeed top a rival bid from Elf Aquitaine, its French counterpart. It was unclear yesterday whether Elf – around which speculation centred until the start of this week – had made a formal offer. But it is understood to have been in advanced discussions with PetroFina's shareholders until late last week.

Although Mr Desmarest insisted yesterday Total's entry had not been "last-minute", it is thought to have begun serious talks with PetroFina only when media speculation around an Elf-PetroFina merger erupted in mid-November.

> **Some market watchers suggested the Total-PetroFina deal could trigger others**

Mr Desmarest insisted the deal was good for shareholders, with a positive impact on cash flow per share from next year, and on earnings per share from 2001.

Synergies worth FFr2bn ($352m) a year within three years had been identified, particularly through grouping together administrative functions, integrating research and development, *improving the functioning of European refineries*, rationalising distribution, and centralised purchasing. The Total chairman insisted job losses would be limited to a "few dozen".

Total has irrevocable undertakings to swap its shares with the 30 per cent of PetroFina held by Compagnie Nationale à Portefeuille and Electrafina – both controlled by Belgian financier Baron Albert Frère – as well as 10 per cent held by Tractebel, the Belgian energy group, and 1 per cent by Fortis, the Belgo-Dutch financial services group.

The offer will then be extended to all PetroFina shareholders. The new group, Total Fina, will be quoted on the Paris, Brussels, London and New York stock exchanges.

Mr Frère, who will hold almost 9 per cent of the enlarged group, will become co-vice chairman to Mr Desmarest. François Cornélis, PetroFina chief executive, will be deputy chief executive of the new group.

PetroFina was advised by J. P. Morgan with Paribas, and Total by Crédit Suisse First Boston.

Some analysts remained sceptical of the benefits of the tie-up, and expressed *concern that it took Total into petrochemicals*, a sector it has previously avoided.

Mr Cantelaube of Crédit Lyonnais Securities said, "Total's strategy was to develop upstream quite fast while trying to reduce refining and remaining with speciality chemicals. By buying PetroFina, the refining arm has become a very big part of the group and chemicals will become more cyclical. It is a U-turn in strategy."

Some market watchers also suggested the Total-PetroFina deal could trigger others. Total itself would become a more attractive alliance partner in the rapidly consolidating oil sector.

Belgian analysts pointed to the possibility that Tractebel could sell its remaining 3 per cent stake in Total, and use the money for a long-mooted merger with its own 40 per cent owned subsidiary, Electrabel.

That, of course, needs backing from Suez Lyonnaise des Eaux, the French utility group which owns 50.3 per cent of Tractebel, which has so far been lukewarm towards such a merger – and whose single biggest shareholder is Albert Frère.

PROFILE BARON ALBERT FRERE

From nails to oil and media baron

By Neil Buckley

Ends of chapters in Belgian corporate history often seem to coincide these days with ends of phases in the career of one man, Baron Albert Frère.

When ING, the Dutch bank, bid for Banque Bruxelles Lambert, Belgium's number three bank, a year ago, Mr Frère's agreement to sell his 37 per cent cleared the way for the takeover.

When France's Axa-UAP moved in May to take full control of Royale Belge, Belgium's second biggest insurer, it was ending a joint control deal with Mr Frère.

And this week, the media-shy financier's agreement to sell his 30 per cent stake in PetroFina opened the door to Total.

Perhaps for Belgium and Mr Frère, this latest deal is most symbolic. PetroFina was, until recent years, Belgium's biggest company by market capitalisation, its premier industrial asset, and – alongside holding company Société Générale de Belgique (SGB) – the business every Belgian family held shares in.

The appointment of the iron nail merchant's son from Charleroi to the chairmanship of the 70-year-old former Compagnie Financière Belge des Pétroles (telegraphic code: Petrofina) on May 11 1990 was his proudest day.

Swapping his stake for one in Total starts a new phase for the 72-year-old, after several incarnations.

First, he used the family nail business as a basis to become uncrowned king of the Belgian steel sector, selling his steel interests to the state in the late-1970s.

From 1982, as head of Belgium's second biggest holding company Groupe Bruxelles Lambert (GBL), he was the wheeler-dealer international financier who built a complex empire of cross holdings with stakes in businesses spanning finance, energy and leisure.

Only the unhappy episode with Drexel Burnham Lambert, the Wall Street junk bond pioneer that collapsed in 1990 – and in which GBL had to write off a BFr3.2bn ($91m) stake – marred the record.

Chairmanship of PetroFina provided relief from the Drexel debacle. Mr Frère's GBL had become largest shareholder in PetroFina in 1989 through a complex share swap with SGB.

In recent years, Mr Frère has reinvented himself again, as media magnate, with control of Luxembourg's CLT-UFA, Europe's biggest commercial broadcaster, and a stake in France's Canal Plus.

But a deal two years ago pointed the way to Mr Frère's next phase. He sold a 25 per cent stake in Tractebel, the fast-growing Belgian energy group, and used the proceeds to buy 11.5 per cent of Suez Lyonnaise des Eaux, the French utility group, gaining a seat on the board.

Now the PetroFina deal will leave him with about 5 per cent of Total, and another board seat.

Associates say Mr Frère is moving from leading positions in Belgian companies, to smaller stakes in international groups.

"Suddenly you find you are number one in Belgium, but the market is no longer Belgium, it is Europe," said Didier Bellens, GBL's managing director, yesterday. "We were happy to be shareholders of Royale Belge, PetroFina, Banque Bruxelles Lambert, these were world-class companies. But the market changed, the competition became worldwide."

Some analysts suggest the moves are also an effort to simplify his sprawling empire, before passing it on to his son Gérald and daughter Ségolène.

But, suggested Mr Bellens, rumours of Mr Frère's retirement were premature. "I think he is probably the kind of person who will never retire," he added.


Albert Frère: entering a new phase in his career — Rex Features

TAKING STOCK

European producers assess their next moves

By Robert Corzine and Anthony Robinson in London, and Paul Betts in Milan

European oil companies were yesterday assessing their next moves in the aftermath of the Exxon-Mobil deal in the US and Total's takeover of PetroFina of Belgium.

Elf Aquitaine, which had been mooted as the favoured partner for PetroFina, decided against a bid because the Belgian company was too expensive and its refining, marketing and chemical operations in the US clashed with Elf's strategy, according to executives.

"It's always good to take part in the trend of the moment," said Bernard de Combret, head of Elf's refining and marketing division. "But it is also very important to follow the strategy you have defined."

Elf also says it does not believe companies of its size will be at a disadvantage in competing for upstream exploration and production deals with the likes of Exxon Mobil and BP Amoco.

Elf has not ruled out a possible merger, but executives are likely to insist that any combination be based on sound industrial and commercial factors.

Italy's Eni oil and gas group, Europe's fourth largest, is not currently involved in any merger or acquisition talks. The company, 37 per cent owned by the Italian government, is however, pursuing contacts with other oil groups on possible deals and partnerships involving specific product areas or geographical sectors.

It is seeking ways to enhance its European downstream refining and marketing activities. However, tentative talks with Royal Dutch/Shell on an eventual European downstream deal are understood to have gone nowhere.

The market pressures behind the latest flurry of mega-mergers are also forcing a wave of mergers and cost-cutting among Russia's high-cost and poorly structured oil companies. These moves are expected to accelerate as Russia's wider financial crisis deepens.

In Russia's case the impact of lower world oil and gas prices has been magnified by the collapse of the Russian banking system, and especially those such as Oneximbank, which is linked to Sidanco oil company and Menatep, linked to Yukos Oil, which were part of financial industrial groups.

Rouble devaluation has given partial relief to oil exporters but exports are hampered by pipeline capacity constraints and the prospect of higher export taxes while devaluation has exacerbated the longer-term costs and difficulties of raising foreign capital.

CONSOLIDATION COMPETITION MAY FORCE MORE US MERGERS

Only one way to go

By Christopher Parkes in Los Angeles

Squeezed between the competitive forces generated by the formation of Exxon-Mobil and the BP-Amoco merger on one hand and some of the lowest real oil prices on record on the other, US energy groups have only one way to go: into one another's arms.

From the staid production and refining sector to the rough-neck field service and hardware providers, consolidation has become the sole preoccupation of an industry that until this year had resisted the urge to merge obsessing other industries for the past five years.

Even as Exxon and Mobil confirmed their link, attention turned to Chevron, ranked number four in the world by market capitalisation, Texaco, number eight, and ninth-biggest Atlantic Richfield.

Texaco drew special attention on Monday when it announced it was withdrawing from negotiations to merge its European refineries and retailing operations with those of Royal Dutch/Shell, the Anglo-Dutch combine that will be relegated to second place in the global league by Exxon-Mobil.

One popular theory among analysts was that Texaco had decided its chances of finding a partner and cost-saving synergies would be improved if it entered any marriage intact.

But, like the others, it faces the dilemma of finding the most suitable partner. If, as the actions of industry leaders suggest, size is the greatest competitive advantage, there are limited opportunities for Texaco to compete.

Excluding Shell and BP, Exxon-Mobil's market capitalisation of $242bn makes it roughly the size of the rest of the world's top-10 combined.

That appears to limit the options for deals with one of the top three, which would almost certainly lead to daunting regulatory complications.

The economic merits – beyond possible cost savings – of the mega-oil companies have yet to be proved. But they are likely to gain a considerable strategic and cost advantage in negotiations for rights to find and exploit reserves in promising but remote areas of Russia, for example, and strike co-operative bargains with the likes of Saudi Arabia which is looking for prospective collaborators.

While the rest of the first-tier companies have been challenged to seek imaginative solutions, lesser groups face a testing time which *may see many crushed*.

Prospects are better for the oil field services and technology sector, which has been busy consolidating for the past two years as the majors have sought out one-stop providers.

Options include more mergers and greater specialisation. But smaller oil explorers and refiners find little comfort wherever they look.

The oil price cycle, which has traditionally helped maintain the hope that something will turn up, is showing no signs of recovery.

Even if the Asian economic recovery starts next year, as predicted by many economists, long-term growth in energy demand is still expected to hover around 2 per cent or so annually.

Recent background and coverage since the Financial Times broke news of the Exxon-Mobil merger last Thursday is available on the FT's website, www.FT.com.

INTEGRATION RETENTION OF MOBIL NAME MAY HELP CUSHION CULTURAL SHOCKS

Tie-up needs a willing junior partner

By Christopher Parkes

Packed with details of expected financial and strategic benefits, yesterday's announcement of the formation of Exxon Mobil in the biggest merger on record *addressed few of the cultural* questions raised since word of the deal broke last week.

But the planned structure made clear that though the Mobil brand will remain, its managers will be very much the junior partners following completion of a deal which will leave Exxon shareholders owning 70 per cent of the new company.

Lucio Noto, Mobil chairman will serve as number two to Exxon's Lee Raymond, and the enlarged 19-strong board will include only six of his colleagues.

While logical, given the prominence of both company logos in world markets, maintaining two brands and their complementary marketing divisions may reduce the potential for early economies, estimated by the partners yesterday at about $2.8bn before tax.

Yet the retention of the Mobil name may also help mitigate some of the cultural shocks inevitable in the process of grinding out the savings through plant closures, spin-offs and lay-offs.

Although no job cut estimates were on offer from the companies yesterday, analysts said most were expected in marketing and refining, which account for about half the 123,000 total, and might run as high as 14,000.

More details are expected *as negotiations continue and* the world's regulators tackle the biggest merger yet presented to them. Unusually, yesterday's official announcement did not name an expected completion date, only that details would be made available in time for the annual meetings next spring.

Under the terms announced yesterday, the transaction is intended to qualify as a tax-free pooling of interests despite the dis*parity in the partners' sizes*, in which Mobil shareholders will exchange their shares for 1.32015 Exxon units.

Valuing Mobil at $99 a share, the terms represent a premium of more than 30 per cent over the company's closing price on November 24 when rumours of a link began to circulate.

Touting the advantages of a merger, the companies said that beyond the near-term economies, they expected the link to allow them to enhance shareholder value longer-term by producing a higher return on capital employed than either could achieve alone.

Mr Raymond and Mr Noto said the companies complemented one another "in almost every facet of the business".

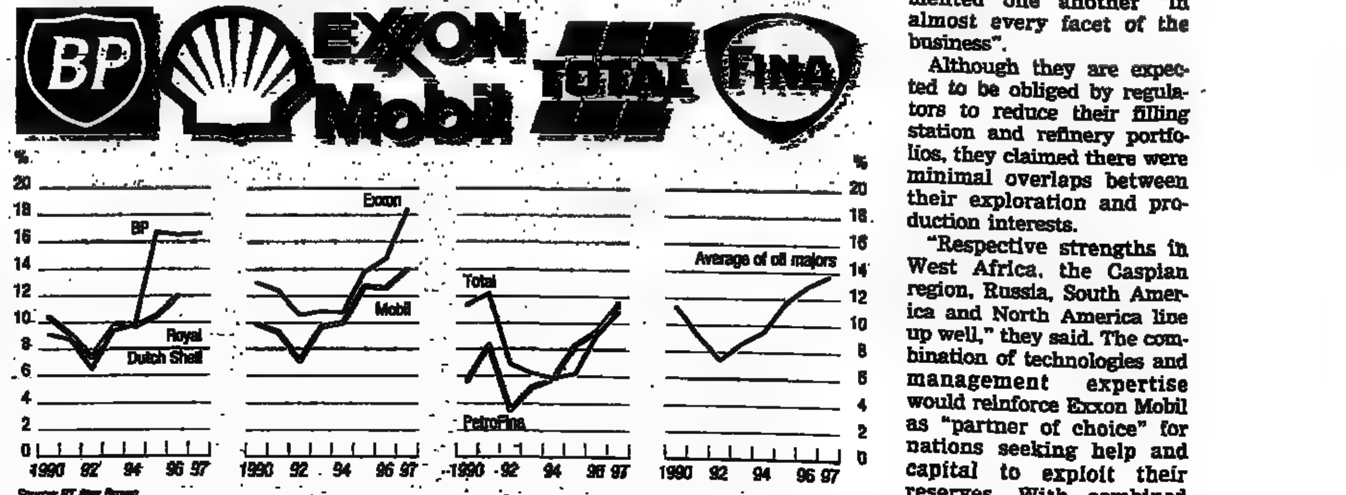
Although they are expected to be obliged by regulators to reduce their filling station and refinery portfolios, they claimed there were minimal overlaps between their exploration and production interests.

"Respective strengths in West Africa, the Caspian region, Russia, South America and North America line up well," they said. The combination of technologies and management expertise would reinforce Exxon Mobil as "partner of choice" for nations seeking help and capital to exploit their reserves. With combined sales of natural gas of 14bn cu ft a day, the new company would be well-placed in this fast-growing market, and there was a strong fit in lubricants.

Mobil is the world's leading lubricants marketer while Exxon is the biggest refiner of the base stocks used in their manufacture.

In US marketing and refining, they said, Exxon Mobil would "approach the size" of competing downstream joint ventures which include Texaco's link with Shell and Saudi Aramco.

Oil majors: return on capital employed (clean)



Source: BT Alex Brown

METALS PROFITS RISE 42% TO DM741m

Disposal helps Degussa post record figure

By Tony Barber in Frankfurt

Degussa, the German metals and chemicals group, yesterday announced record earnings for the fourth successive year and said it expected good results in 1999 thanks partly to its impending merger with Hüls, the chemicals division of the utility group Veba.

Pre-tax profits rose in the year to September 30 by 42 per cent to DM741m ($438m), largely because of a 4 per cent increase in group sales to DM15.9bn.

But Degussa also recorded an extraordinary gain of DM50m from the sale of part of its stake in the German copper producer Norddeutsche Affinerie.

The company said that, despite signs of an economic slowdown in North America and the continuing impact of the financial crises in Russia and Asia, "we are well-positioned to withstand a deterioration in the market environment and expect to report high earnings again in the current fiscal year".

Excluding precious metals trading, sales in each of the company's four main foreign regions – North America, Europe excluding Germany, Asia and Latin America – rose by more than 10 per cent in the 1997-98 business year.

But in Germany, where Degussa said demand for dental products had fallen substantially, sales dropped by 2 per cent to DM3bn.

Degussa attributed the fall in Germany to uncertainty among dentists and patients about the impact of legislation introduced last January to cut health care costs.

The company has recently been active in the Asian market, buying South Korea's largest producer of industrial carbon black last month from LG Chemical.

The acquisition turned Degussa into the world's second biggest maker of industrial carbon black, with an annual production capacity of more than 1m tonnes for rubber and pigment blacks.

Degussa shareholders are expected to approve the merger with Hüls at an extraordinary meeting on December 18.

Trading in the shares of the new company, Degussa-Hüls, is expected to start on February 8.

Life sciences merger hopes for a glamorous union

For Aventis to be successful it will mean a marriage of German and French cultures, write David Pilling and Graham Bowley

It has a brand new name, *Aventis*, a new interlocking management structure and, in time, it might even have a spanking new headquarters in Strasbourg on the Franco/German border.

But what will really interest investors and competitors is whether the merged life sciences businesses of Hoechst and Rhône-Poulenc can forge a union that is more attractive than its less than glamorous halves.

That will not be easy. Aventis will become one of the biggest pharmaceuticals and agrochemicals companies. Not only does the merger involve two groups undergoing rapid and radical restructuring, it will entail uniting French and German cultures. The aim is to create what executives were yesterday proclaiming as a new type of trans-European company capable of battling it out in the marketplace.

"Only a few companies will be able to participate in the growth of the emerging life sciences sector," said Jürgen Dormann, the Hoechst chairman who will occupy the same position at Aventis. He said the new company would have the scale, scientific know-how and resources to be one of that select band.

To make that boast a reality there are several hurdles *to overcome. The first is to* engineer a coherent strategy following a dizzying bout of acquisitions, demergers and disposals at both companies.

Over the past few years, Rhône-Poulenc has bought 100 per cent of Rhône-Poulenc Rorer, its pharmaceutical division; created Merial, a veterinary health company, through a merger with the animal health business of Merck of the US; and formed a separate chemicals division, part of which has been floated off.

Hoechst has been even more frantic, engineering a three-way pharmaceuticals merger of its own drugs business with Marion Merrell Dow of the US and Roussel Uclaf of France. At the same time, it has also been pulling out of the chemicals business, announcing only last month it was spinning off Celanese and Ticona.

But both Rhône-Poulenc and Hoechst still have a lot of restructuring to do. And what has already been accomplished has yet to be properly digested. At HMR, the Hoechst drug division, profitability has failed to meet Mr Dormann's ambitious targets because restructuring costs have overshadowed savings.

Rhône-Poulenc has its problems too. Admittedly, it *has launched two promising* products recently, particularly Taxotere, a cancer treatment. It also has a world-class vaccine business. But observers fear the company's gamble on the emerging sciences of genomics and gene therapy mean its really exciting products, if they come to fruition, are still several years away.

Given the pace of change and the uncertainties at both companies, some analysts worry that Aventis may be one step too far – a cobbling together rather than a merger. "I would have preferred them to have cleaned up their own houses first," said one investment banker. "But if they had done so they would have become easy targets. Merging was one of their few options."

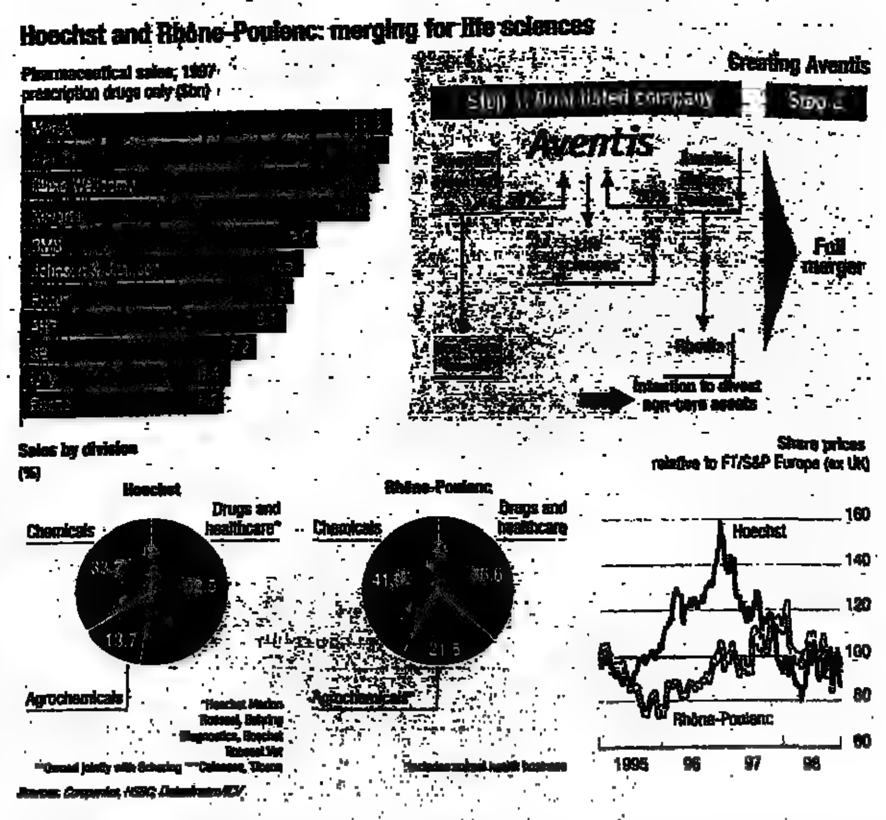
The second important hurdle will be to convince investors that the new management team can work together. Executives went out of their way yesterday to stress that they had learned the lessons of other failed merger attempts – such as that between Glaxo Wellcome and SmithKline Beecham – which foundered when the two UK companies decided their management teams' and corporate cultures were incompatible.

"All the sensitive issues of a financial, legal, corporate governance or management nature have already been settled," said Jean-René Fourtou, chairman of Rhône-Poulenc and vice-chairman of Aventis.

The third obstacle is the new company's under-representation in the US, where nearly half the world's drugs are sold and the juiciest margins earned. Executives said the US sales force would be increased by at least 500 representatives to 4,000 in an effort to tap the potential of existing and forthcoming drugs in the US. Even so, its sales clout will be some way behind the real heavyweights such as Merck.

The company admits that sales in the US and elsewhere will go through a mediocre patch as one important drug goes off patent but after that, "Aventis's sales growth will be quite different," said Igor Landau, a member of the board of management. "The combined marketing muscle will mean that one plus one equals more than two."

Aventis must hope that the same holds good for the company as a whole. To do that it must achieve more than the $1.2bn annual cost savings it is aiming for within three years. More important, it must make good Mr Dormann's promise of creating a "new company with a new culture and clear focus". Judging by the acoustic problems that accompanied the triple translation – from French, German and English – at yesterday's launch, there are still wrinkles to iron out.



Coffeng suspended after options probe

By Gordon Cramb in Amsterdam

The Dutch securities industry is facing renewed judicial attention after a marketmaking company on the Amsterdam bourse yesterday had its operations suspended and an options dealer was arrested.

The business of Coffeng, the main marketmaker in shares of Royal Dutch, the Shell company that is flagship stock on the exchange, was halted from Monday because it had inadequate capital. This emerged amid a search by justice officials of Coffeng's offices.

The unnamed trader was remanded in custody.

He is alleged to have accumulated large amounts of put options in Royal Dutch both before and after the oil company warned in mid-September that it would be affected by a weakening crude market in the current half-year.

Insider trading is one of the allegations under investigation.

Royal Dutch shares fell more than 5 per cent on that announcement, but subsequently recovered as merger activity took hold in the world energy sector.

The derivatives position held by Coffeng, though initially yielding profits, worsened as a result. By some accounts, recent purchases were made at unrealistic exercise prices in an apparent attempt to bring earlier tranches back in the money.

The scandal is the worst since police and justice officials raided the stock exchange floor just over a year ago, in an investigation involving alleged money laundering and tax fraud as well as insider dealing. The main cases from that have yet to come to trial.

It also follows a spate of liquidity problems at options trading firms in the city this summer.

ING, the large financial group, injected Fl 50m ($36m) into Extra Clearing, a subsidiary that had been hit by one of these defaults.

Kas-Associatie, the bourse bank and itself an Amsterdam quoted company, acted as clearer for Coffeng and therefore had to guarantee its positions. It did not immediately provide an assessment of the cost. But the listed Bever Holding, which owns 30 per cent of Coffeng, said the affair would cost it a maximum of Fl 10m.

Estimates of the total losses were running yesterday at Fl 40m-Fl 60m.

Four buy into French electronics group

By David Owen in Paris

Four leading international computer and telecommunications companies are to pay FFr450m ($79.3m) each for *7.5 per cent stakes in Thomson* Multimedia in a deal that will see 30 per cent of the French consumer electronics group's capital transferred to private hands.

The four are Alcatel of France, DirecTV and Microsoft of the US, and NEC of Japan. The French company announced in July it was signing memoranda of understanding with the four aimed at forming strategic partnerships to accelerate its development.

The move may be only the first step in a process that could see the company floated next year. Such a *step would significantly* increase its room for strategic manoeuvre, as well as further reduce its high debt load.

It seems unlikely, however, that France's Socialist-led government would consent to the state holding falling below 50 per cent in the short to medium term.

Gearing is expected to fall to about 100 per cent after the FFr1.8bn capital increase provided by the four strategic partners.

The French authorities are understood to have placed a notional value of FFr4.2bn on the group prior to the new partnerships – a figure which the proposed capital injection will ostensibly increase to FFr6bn.

But Thomson Multimedia management will expect valuations of the group, which has 20 per cent of the US colour TV market, to rise further as a result of the increased credibility brought by the new partners.

It has indicated in the past that it hopes the partnerships will help improve its positions both upstream in components and downstream in interactive television-based services, while confirming its existing strength in finished products.

In July, the company reported a first-half operating profit of FFr64m.

Telecom Italia mulls pay TV plans

By Paul Betts in Milan

Telecom Italia's board yesterday asked Franco Bernabe, the privatised telecommunications group's new chief executive, to complete as soon as possible negotiations over plans to participate in a new Italian digital pay television system.

Although the board did not mention Rupert Murdoch in the short communique it issued last night, negotiations with the Australian media magnate are understood to be continuing.

Mr Murdoch announced last week his interest in acquiring a 39 per cent stake in Stream, Telecom Italia's multi-media subsidiary and its proposed vehicle to develop an Italian digital TV platform, with *France's TF1 television* network also taking a 10 per cent stake.

Mr Bernabe is familiar with both Mr Murdoch and Letizia Moratti, the Australian magnate's new European television business associate.

However, he is understood to be reviewing the digital TV plans of the former Telecom Italia top management, unconvinced that the telecoms group should become a direct participant in the high-risk and high cost pay-TV market.

The new Telecom Italia chief executive is also understood to believe the compa*ny's essential role is to be a* communications service provider, and is reluctant to push it into the broadcasting business.

There were reports last night that Mr Bernabe is considering selling a majority stake in Stream to Mr Murdoch and his French partners in an effort to reduce Telecom Italia's exposure in the digital pay-TV project.

Although this is likely to raise a new political storm in Italy with both centreleft government and rightwing opposition leaders worried over Mr Murdoch's possible entry into the Italian broadcasting market, Mr Bernabe seems intent on minimising his company's financial risks in the venture.

There have also been suggestions that Telecom Italia might even abandon its earlier digital TV ambitions.

Canal Plus, the French pay-TV network which owns 90 per cent of Telepiù, the rival Italian digital TV network, has also continued its efforts to reinforce its position in Italy to fend off Mr Murdoch's eventual challenge.

Telepiù has already signed up exclusive rights with seven Italian soccer clubs and a film rights deal with the Florence Cecchi Gori media and film production group.

NEWS DIGEST

CARMAKING

BMW shares fall 8% on concerns about Rover

Shares in BMW, the German luxury carmaker, fell more than 8 per cent yesterday after speculation that management was divided over what to with Rover, its troubled UK subsidiary. The German newspaper Die Welt reported that Bernd Pischetsrieder, BMW chairman, was at loggerheads with another management board member, Wolfgang Reitzle, over whether Mr Reitzle should take on the dual role of running Rover and being responsible for BMW's distribution network.

Mr Reitzle was said to be reluctant to take on the Rover job because of the subsidiary's lack of success since BMW acquired it in 1994. At the time of the takeover, Rover was intended to become profitable in 2000, but some car industry specialists say the company could make a loss of up to DM1bn ($591m) this year.
Tony Barber, Frankfurt

FOOD RETAIL

Enaco IPO could raise Pta33bn

Enaco, a Spanish food retailing group, could be valued at up to Pta33bn ($229m) when its shares begin trading on Spain's stock markets next week in the country's first initial public offering since the autumn's turmoil on stock markets.

The company this week began meeting European institutional investors, taking advantage of a strong rebound in stock market valuations in recent weeks. ABN Amro Rothschild is global co-ordinator for the offering.

Shares in Enaco, which has interests in food retailing and wholesaling, cash-and-carry and franchise operations, have been priced at between Pta1,350 and Pta1,550 each and a final price will be set on December 8 before trading begins on December 11 in Madrid and Valencia.

At the indicative range, the company comes to the market with a price-to-earnings *ratio* of 20 to 23, according to Carlos Perez Font, finance director, compared with an average p/e ratio of 24 on the Madrid bolsa. **Vincent Boland**

TELECOMMUNICATIONS

Telenor buys Russian stake

Telenor, Norway's state-owned telecommunications company, *is to buy a 25 per cent stake in VimpelCom*, Russia's largest mobile operator, for $160m in cash. The company reached an agreement with VimpelCom, which controls the only digital cellular netowrk in the Moscow area and cellular licenses for 68 per cent of the Russian population, *whereby Telenor will get a strategic ownership* interest in the voting stock. The deal will enable Telenor to develop its GSM licenses, fibre optic network and internet services in Russia. **Valeria Sköld, Oslo**

VOLVO

Excavator plant closed

Volvo, the Swedish automotive group that announced a wide-ranging restructuring this week, yesterday said it was closing its excavator manufacturing plant in southern Sweden with the loss of 500 jobs. Closure of the Eslöv factory follows Volvo's acquisition of Samsung's construction equipment division in South Korea. The company said the Swedish plant had lost money for several years. The job losses will form part of some 5,300 redundancies expected at Volvo. **Tim Burt, Stockholm**

CABLES

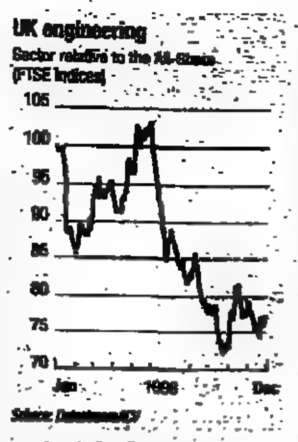
Pirelli in fibre optic deal

Pirelli, the Italian tyres and cables group, yesterday made a breakthrough in the US optical fibre communications market after being chosen by Frontier Communications to increase the capacity and speed of its optical network, in a deal estimated by analysts to be worth $150m. The Italian company has pioneered photonics technology and is establishing itself as a market leader in a business expected to grow rapidly as a result of the success of the internet and the liberalisation and deregulation of telecommunications. Pirelli has been investing heavily in expanding its *cables, optical fibres and photonics businesses*, which now generate annual sales of more than $4.5bn.
Paul Betts, Milan

COMMENT

Engineering M&A

Siebe's pounce on BTR has renewed hopes of a bidding spree among UK engineers. But investors should look more closely before getting excited. Many Siebe followers are dismayed that an engineer doing a fair job of focusing on higher value activities should want to inherit a scattered, problem-ridden group. But most UK engineers are similarly diversified – think of IMI, FKI or even BBA. As their organic growth has dried up, they have become more restless in their hunt for deals, but perfect fits will be hard to find. And the looser the fit, the more questionable the synergy benefits. BBA and TI Group are among those seeking "step change" acquisitions. Roberto Quarta cannot afford to ruin BBA's premium reputation by diversifying further, however. Meanwhile, TI's Sir Christopher Lewinton could be short of sensible targets in the UK if Vickers' bid for Ulstein Holding succeeds, and the chance of finding bargains in the US look slim.



US buyers have not been put off cash bids by goodwill accounting, but some are toying with all-share pooling deals. As LucasVarity found out, however, some London investors are still nervous about taking American paper. The other problem with US pooling rules is that the buyer cannot make significant disposals within two years of the deal. Unless buyers can wield the axe on non-core businesses, their acquisition plans risk destroying both focus and value.

Cortecs

Oh no, not another biotechnology company that got carried away with its own optimism. In the wake of the British Biotech debacle, that is the kneejerk reaction. In Cortecs' case, there is also truth in the interpretation, but it is out of date. Once a biotech company has reformed its founding messianic board, as Cortecs did earlier this year, it is inevitable that the work in progress will be found wanting. It is good news that the company now has a more heavyweight team and is inviting independent assessment of its projects. Also welcome was the lack of a kneejerk reaction among other biotech stocks. As the sector grows up – and Cortecs demonstrates the necessary pain of this process – the better run companies will become more immune to others' embarrassment.

BIOTECHNOLOGY SECTOR RECEIVES FURTHER BLOW AS COMPANY ADMITS DELAYS WITH TWO DRUG DEVELOPMENT PROGRAMMES

Two senior Cortecs directors to resign

By Virginia Marsh

Cortecs, the UK biotechnology company, yesterday admitted that two of its three lead drug development programmes were running behind earlier forecasts, and said its chief executive and chief operating officer had agreed to resign.

The news is a further blow to the UK biotechnology sector which was shaken this year by allegations that British Biotech, another quoted company, misled investors by exaggerating the efficacy of drugs under development.

Shares in Cortecs – already hit by a row over its former chairman's pay package and a looming funding shortfall – more than halved, falling 15p to 11½p. Last February, they stood at 196½p. The company said new regulations meant it might have to collect extra data to secure approval for Macritonin, its osteoporosis treatment, in Europe.

This would "delay significantly" any product registration, perhaps until 2004. This was the earliest likely date for a US application, too.

In addition, the treatment might have to be reformulated using a higher dosage, threatening its profitability.

Cortecs also said it was having to conduct extra early stage trials for Pseudostat, its cystic fibrosis and bronchitis treatment.

"One feels misled on some of the programmes," said Nick Woolf, analyst, at BancBoston Robertson Stephens. "The level of optimism on the part of the former management was overdone."

However, other analysts said they were relieved that Macrulin, oral insulin and a potential blockbuster, appeared to be on track.

The problems emerged during an internal review led by Phil Gould, a former Glaxo Wellcome executive, who joined Cortecs as research director in January.

Mr Gould has now been appointed acting chief executive following the departure of Michael Flynn. Martin Preuveneers, chief operating officer, is also leaving.

Mr Flynn, formerly chief scientific officer, became acting chief executive in June after the resignation of Glen Travers, executive chairman. Mr Travers, who is claiming £1.5m ($2.5m) in compensation for loss of office, left following unhappiness among investors at slow progress in striking distribution deals with pharmaceutical companies for Macritonin.

It has since emerged that his pay package included £34,500 for business class flights to Australia for his family and £42,400 for membership of a chief executives' forum. Mr Gould said he had begun to present the findings of his review to Mr Flynn earlier in the year. Last month, he felt obliged to take the matter further and informed the board.

Internet growth lifts LSE

By Jean Eaglesham

The rapid growth in share price internet services for private investors has lifted the London Stock Exchange's income, putting it in a "strong financial position" ahead of its planned alliance with the German bourse.

Despite an 8 per cent fall in income from trading following a cut in trading fees, the exchange raised its total income by 8.5 per cent to £76.2m ($125.7m) in the six months to September 30.

Income from internet services, expected to grow further as use of the net expands, was a "very important component" of that overall revenue, the exchange said. Listing fees were also buoyant, with a record number of listings during the first half: 121 smaller companies joined the London markets raising a total of £1.2bn.

Income from listings had decreased in the last few months, however, because of market volatility, but trading volumes were holding steady.

The £15.8m of profit transferred to reserves, after tax and interest, was slightly down on the £18.3m for the same period last year.

A priority was to continue preparations for the euro. "We may not be joining as a country, but we are as an equity market, and we are ahead of the game," it said, citing the various euro-denominated products that can already be listed in London.

The fact that other European exchanges were interested in creating a single pan-European market would not slow down the progress of the planned Anglo-German alliance, it said.

Carlton hit by On Digital

By John Gapper

Carlton Communications yesterday said pre-tax profits had dipped slightly because of the cost of launching the On Digital pay television service.

Despite stronger than expected profits from its ITV licences, including Carlton in London and Central Television, the pre-tax result fell from £316.3m to £312.1m ($515m) in the year to September 30 because of its 50 per cent stake in On Digital.

As well as investing £27.9m in On Digital and the development of digital channels such as Carlton Food Network, it was also affected by a sharp fall in operating profits in its products division from £52.3m to £22.8m.

The drop was caused by weakness in demand for products such as Quantel post-production and editing equipment in Asia, and by confusion over likely standards for high-definition TV in the US.

Carlton's figures were ahead of analysts' expectations, helped by growth in TV advertising and the start of a fightback by ITV from falls in its share of viewing.

Carlton, which last week announced the appointment of Steven Cain, marketing director of Asda, as chief executive, raised profits, excluding exceptionals and digital television costs, from £326.7m to £330.4m.

Analysts expect Carlton's investment in On Digital, launched in November, to rise to about £80m in the current year. On Digital is providing subsidies to encourage sales of digital set-top boxes.

Turnover rose from £1.75bn to £1.84bn.

Micro Focus blames fall on poor US sales

By Paul Taylor

The first evidence that work solving the Year 2000 computer date problem may have passed its peak in the US has begun to emerge.

Year 2000 work has helped boost the results of many specialist computer software and services companies and has been one reason for their strong share price performance over the past few years.

Micro Focus, the Anglo-American software development tools and services group, yesterday blamed weakness in North America, particularly in its Year 2000 business, for holding back its quarterly results.

At the same time the group, which acquired Intersolv in September and issued a profit warning early last month, announced that Gary Greenfield was taking over as chief executive following the resignation of Martin Waters.

Mr Waters, whose departure was said to be "amicable", will remain a non-executive director.

After taking a £11.8m ($19.5m) charge related to the acquisition, Micro Focus reported a £10.9m pre-tax loss for the three months to October 31, against a £3.84m profit.

Losses of 10.8p a share compare with profits of 3.5p.

Excluding non-recurring charges and the amortisation of goodwill, pre-tax profits actually increased to £4.62m (£3.84m).

At the operating level, the group broke even in the quarter compared with a £2.3m profit a year earlier. Excluding non-recurring charges and the amortisation of goodwill, the figure edged higher to £3.65m (£3.21m).

Revenues jumped to £40.1m (£25.4m) reflecting the inclusion of the Intersolv business from September 24.

Micro Focus, which now derives 60 per cent of revenue from the US, issued a profit warning last month, noting that demand for products to tackle the millennium bomb had fallen.

Yesterday the group, which provides software services to corporate customers, said its Year 2000 business had been affected "by increased competition and customers moving to the later stages of their remediation processes, for which [it] did not have the appropriate products until November".

Mr Greenfield said the group's European operation remained very strong.

The shares fell 8½p to 117½p.

COMPANIES & FINANCE: UK

GRE accelerates plans to stay independent

By Andrew Bolger

Guardian Royal Exchange, the UK composite insurer that is in talks with several potential bidders, yesterday insisted it also had a viable strategy for remaining independent.

John Robins, chief executive, said he was accelerating plans to focus operations and cut costs across the group, so shareholders would be able to judge properly the group's options.

However, Mr Robins confirmed in an interview his board would consider all options – including a complete or partial sale of GRE, which is likely to fetch £3bn-£4bn ($5bn-$7bn). He said: "This process must be completed by the end of January."

Mr Robins pointed to substantial savings achieved in its life insurance business and in PPP Healthcare, bought last year for £435m. "We have got to get out of areas we are no good at and build shareholder value in the areas we can."

GRE is particularly excited about the potential savings from using digital imaging systems to transmit claim forms to the Indian state of Bangalore for processing and simple claims settlement. An increasing number of companies use low-cost countries for similar types of back-office processing. GRE's 70 Bangalore employees earn an average of £1,000 a year, compared with £20,000 for employees doing similar work in the UK.

But analysts remain sceptical that Mr Robins will be able to pull enough out of the hat to remain independent. Steven Bird of Merrill Lynch said: "They still lack critical mass and are going to remain under pressure in key areas such as direct motor insurance."

GRE, long seen as vulnerable to takeover, said last week it was in talks with "several parties" over the sale of all or parts of its business. It is being advised by Morgan Stanley Dean Witter, the US investment bank.

Axa, the French insurer, approached GRE about six weeks ago, but the UK composite felt it was not willing to pay enough, although no offer was formally tabled. Axa has a controlling stake in Sun Life Provincial, the UK life assurance company. Mr Robins declined to confirm the approach by Axa, or any of the other potential bidders. But he did say: "Anybody who is serious is already in the process."

New breed of managers take over barstool vacated by brewers

Nomura and other investors see strength in profits as well as beer in running tenanted pubs, writes **John Willman**

It is too soon to call time on the traditional British brewing group which sells most of its beer through a chain of tied pubs. But last orders are certainly approaching.

Two of the UK's big four brewers have now parted with their tenanted pubs to focus on their beer brands and managed theme pubs. A third is running its tenanted operation down.

Meanwhile, powerful new pub operators are emerging, such as Unique which yesterday launched itself from the portfolio of pubs owned by Nomura International, the Japanese investment bank.

With almost 2,600 outlets across the country, Unique is the UK's biggest landlord in the tenanted pubs sector. Its estate is as large as that of Scottish & Newcastle, Britain's largest brewer.

It joins several other companies which have been buying up tenanted pubs – long regarded as the underperforming tail of the industry. These are proving attractive to investment banks which hope to raise their profile with specialist management, often as a prelude to flotation. The opportunity to create these companies comes from the refocusing of the large brewers around the faster growing segments of the business:

● the branded beers and lagers that account for a growing proportion of sales in the UK

● the managed pub chains created to attract particular segments of the market with brands aimed at groups such as women drinkers, young professionals and families with young children.

In the past, owning a tenanted pub provided an outlet for a brewer's beer with a largely captive audience drawn from its catchment area. In a more affluent country, drinkers are willing to travel for a night out to find the ambience they want rather than the standard bar.

The rewards for success in creating attractive – often themed – pubs are enormous. Turnover in around a third of Britain's lowest performing boozers is less than £2,000 ($3,300) a week, yet town centre managed houses can rake in more than £20,000 a week. Gross margins in the big managed pubs can be more than 35 per cent – almost double the 20 per cent in the smallest.

At the same time, brewers with successful brands no longer need to own pubs to sell their beers in. Guinness, the brewing arm of Diageo, has 5 per cent of the UK market without owning a single pub. And Anheuser Busch of the US has won more than 2 per cent of the market for Budweiser by slick marketing and good brand management.

Tenanted pubs have moderately secure income in the form of rent and the cut owners can take on beer supplies where there is a tie. But growth is too slow to excite big brewers which see more rewarding opportunities elsewhere.

There has been a steady separation of brewing from pub ownership, with Greenalls Group leaving the brewing business in 1991 to concentrate on running pubs. Carlsberg-Tetley, the fourth largest brewer, has no pubs and Scottish & Newcastle has made clear its commitment to focusing on managed pubs.

Earlier this year, Bass, the country's second largest brewer, sold its 1,400 tenanted pubs to Punch Taverns, a new venture financed by BT Private Equity. Appropriately, it was formed by two restaurant entrepreneurs: Hugh Osmond, former executive director of Pizza Express, and Roger Myers who built up Pelican Group, owner of the Café Rouge chain, before selling it to Whitbread in 1996.

The biggest collection of tenanted pubs, however, had been assembled by Nomura. Its Principal Finance Group, headed by Guy Hands, had scooped up 1,950 free houses in the Phoenix group in 1995, adding the 4,309 pubs of the former Intrepreneur and Spring estates last year.

This made the Japanese investment bank the UK's largest pub landlord by a fair margin, though Nomura has been quick to package up parts of the estate and sell them on where the price was right. Some 900 have been sold piecemeal to various small pub operators, 310 to Scottish & Newcastle and 845 of the Phoenix chain to Wellington, another company formed by Mr Osmond and Mr Myers.

That left Nomura's Grand Pub Company with 3,700 or so tenanted pubs. Unique has been able to "cherry-pick" the best of the collection for its operation, with a view to flotation by 2001. Nomura is left with a rump of 1,100 which it hopes eventually to sort out and sell on.

So what do the investment banks which back these new operators see that the brewers could not? Precisely that steady stream of rental income which can service debt finance and perhaps be securitised at a later stage.

Meanwhile, the managers hope that by being prepared to invest in a sector that has been neglected for much of the last decade, they will produce some growth – particularly from landlords motivated enough to put some of their own capital into the businesses.

Last orders may be coming for the tenanted pubs owned by brewers. But there is plenty of drinking-up time yet for those in the hands of specialist managers.

RESULTS

Company	Period	Turnover (£m)		Pre-tax profit (£m)		EPS (p)		Current payment (p)	Date of payment	Corresponding dividend	Total for year	Total last year
Amberley	6 mths to Sept 30	32.8	(24.4)	3.16	(2.62)	3.11	(2.89)	0.55	Feb 19	0.48	-	1.85
Avesco	6 mths to Sept 30	22.7	(15.2)	2.98	(3.2)	16.2†	(19.4)	3.5	Apr 6	3	-	7
Carlton Comms	Yr to Sept 30	1,868	(1,784)	312.1♥	(316.3♠)	32.3	(33.2)	8.25	Apr 6	7.5	13.85	12.4
Character	Yr to Aug 31	66.7	(41.3)	7.32	(4.73)	25.79	(15.08)	3.95	Jan 29	3.3	5.4	4.8
Digital Animations φ	6 mths to Sept 30	0.698	(0.037)	0.048L	(0.609L)	0.31L†	(4.14L)	-	-	-	-	-
East Surrey	6 mths to Sept 30	26	(24.4)	9.77	(10.8♥)	13.3	(15.6)	4.4	Jan 5	4	-	12
Fairlake φ	Yr to Sept 30	2.38	(2.03)	0.805	(0.507)	23.54#	(14.16)	4	-	2	4	2
Gei	Yr to Aug 31	40.8	(43.5)	2.84♥	(1.82♠)	11.53	(8.33)	2.75	Jan 11	2.1	3.75	3
Hazlewood Foods	6 mths to Sept 30★	398.8	(380.9)	19.6	(10♠)	6.28	(2.07)	2.7	Jan 19	2.6	-	7.3
Hogg Robinson	Yr to Sept 30	868.4	(789.7)	14.1	(1.9♠)	10.92#	(3.7L)	4.25	Jan 20	4.07	-	11
Kenwood Appliances	6 mths to Oct 2★	73.4	(81.5)	0.813♠	(0.404♠)	1.1	(0.1)	nil	-	nil	-	nil
Leopold Joseph	6 mths to Sept 30	-	(-)	1.04	(1.02)	14.65	(13.45)	5	Jan 4	4.5	-	20.5
Le Riche	28 wks to Oct 10	85.9	(83.4)	5.56	(6.28)	26	(24.7)	6.3	Dec 18	6	-	26
Manx & Overseas φ	Yr to Sept 30	11.1	(10.3)	0.449♠	(1.49L♠)	0.7†	(2.54)	nil	-	nil	nil	nil
Micro Focus	9 mths to Oct 31	96.8	(86.7)	0.795L♠	(9.01)	2.3L	(8.1)	-	-	-	-	-
Network Technology	Yr to Sept 30★	17.9	(16.8)	0.91♠	(3.29)	1.03	(6.82)	0.55	Mar 1	0.75	1.1	1.35
Sanderson	Yr to Sept 30	73.6	(67.1)	8.59♥	(8.72)	12.8	(10.6)	2.9	Feb 10	2.5	5.2	4.6
Savoy Asset Mgmt φ	6 mths to Sept 30	1.37	(1.09)	0.33	(0.273)	4.4†	(3.7)	2.25	Jan 4	-	-	-
ScS Upholstery	Yr to Sept 30	29.3	(23.7)	3.36♠	(2.3♠)	8.55	(4.45)	2.4	-	-	3.5	-
Shaftesbury	Yr to Sept 30	19.8□	(15.2□)	9.17♥	(5.91♥)	8.53†	(6.24)	1.85	Feb 5	1.5	2.5	2.25
Wagon	6 mths to Sept 30★	174.9	(165.2)	9.5♠	(5.5♠)	11.2	(8.3)	7	April 7	7	-	12

Investment Trusts	Period	NAV (p)		Attributable Earnings (£m)		EPS (p)		Current payment (p)	Date of payment	Corresponding dividend	Total for year	Total last year
Edinburgh Income	6 mths to Oct 31	60.7	(53.9)	0.243	(0.274)	1.62	(1.83)	0.9§	Jan 15	0.9	-	3.6
Scottish	Yr to Oct 31	386.6	(360.1)	18.2	(17.8)	6.41	(6.29)	2.1§§	Apr 6	4.19	7.25‡✻	6.25

Earnings shown basic. Dividends shown net. Figures in brackets are for corresponding period. ♠After exceptional charge. ♥After exceptional credit. †On increased capital. ★Comparatives restated. φAim stock. #On reduced capital. □Gross rental income. §Second interim. §§Second interim of 2.25p also declared, payable on January 8. ‡Includes special. ✻Includes foreign income dividend element.

TENDER NOTICE

UK GOVERNMENT EURO TREASURY BILLS

For tender on 8 December 1998

1. The Bank of England announces the issue by Her Majesty's Treasury of euro 1,000 million nominal of UK Government Euro Treasury Bills, for tender on a bid-yield basis on Tuesday, 8 December 1998. An additional euro 50 million nominal of Euro Bills will be allotted directly to the Bank of England for the account of the Exchange Equalisation Account.

2. The Bills to be issued by tender will be dated 10 December 1998 and will be in the following maturities:
euro 200 million of Euro Bills for maturity on 14 January 1999,
euro 500 million of Euro Bills for maturity on 11 March 1999 and
euro 300 million of Euro Bills for maturity on 10 June 1999.

3. The tenders will be open to anyone who wishes to apply. All tenders must be made on the printed application forms available on request from the Bank of England or, in the case of the market makers listed in the Euro Bill Information Memorandum, by telephone. Completed application forms must be lodged, by hand, at the Bank of England, Customer Settlement Services, Threadneedle Street, London not later than 10.30 a.m., London time, on Tuesday, 8 December 1998. Payment for Bills allotted will be due on Thursday, 10 December 1998.

4. Each tender at each yield for each maturity must be made on a separate application form for a minimum of euro 500,000 nominal. Tenders above this minimum must be in multiples of euro 100,000 nominal.

5. Tenders must be made on a yield basis (calculated on the basis of the actual number of days to maturity and a year of 360 days) rounded to two decimal places. Each application form must state the maturity date of the Bills for which application is made, the yield bid and the amount tendered for.

6. Notification will be despatched on the day of the tender to applicants whose tenders have been accepted in whole or in part. For applicants who have requested credit of Bills in global form to their account with Euroclear or Cedel Bank, Bills will be credited in the relevant systems against payment. For applicants who have requested definitive Bills, Bills will be available for collection at Customer Settlement Services, Bank of England after 1.30 p.m. on Thursday, 10 December 1998 provided cleared funds have been credited to the Bank of England's ECU Treasury Bills Account No. 59005516 with Lloyds Bank PLC, Bank Relations, St George's House, PO Box 787, 6–8 Eastcheap, London EC3M 1LL. Definitive Euro Bills will be available in amounts of euro 10,000, euro 100,000, euro 1,000,000 and euro 10,000,000 nominal.

7. Her Majesty's Treasury reserves the right to reject any or part of any tender.

8. The arrangements for the tender are set out in more detail in the Information Memorandum on the UK Government Euro Treasury Bill programme issued by the Bank of England on behalf of Her Majesty's Treasury on 7 July 1998. All tenders will be subject to the provisions of the Information Memorandum and to the provisions of this notice.

9. The euro 50 million of Euro Bills to be allotted directly to the Bank of England for the account of the Exchange Equalisation Account will be for maturity on 10 June 1999. These Bills may be made available through sale and repurchase transactions to market makers in order to facilitate settlement.

10. Copies of the Euro Bill Information Memorandum may be obtained from the Manager, External Debt, Foreign Exchange Division at the Bank of England (telephone number 0171 601 5982). UK Government Euro Treasury Bills are issued under the Treasury Bills Act 1877, the National Loans Act 1968 and the Treasury Bills Regulations 1968 as amended.

Bank of England
1 December 1998

CANADIAN PACIFIC RAILWAY COMPANY
4 PER CENT DEBENTURE STOCK
THE CALGARY AND EDMONTON RAILWAY COMPANY
4 PER CENT DEBENTURE STOCK

In preparation for the payment of the half-yearly interest payable on January 1 next on the above stocks, the registers will be closed from December 4, 1998 and will be re-opened on January 1, 1999.

Office of the Assistant Secretary,
Canadian Pacific Railway Company

Office of the Secretary,
The Calgary and Edmonton Railway Company

Calgary, Alberta
November 24, 1998

USD 100,000,000
ROBERT FLEMING NETHERLANDS B.V.
Primary Capital undated Guaranteed Floating Rate Notes

Interest Rate	5.875%
Interest Period	November 30, 1998 May 28, 1999
Interest Amount due on May 28, 1999 per	
USD 10,000	USD 292.12
USD 50,000	USD 1,460.60

BANQUE GÉNÉRALE DU LUXEMBOURG
Agent Bank

EURO PRICES

EQUITIES

Bourses slide on profit-taking

EUROPEAN OVERVIEW

By Philip Coggan, Markets Editor

European markets took a hammering yesterday as worries about the prospects for economic growth combined with the weakness of Wall Street to encourage investors to take profits.

The first day of the new trading month brought a rash of economic statistics in the form of purchasing managers' indices from five European countries – Denmark, Germany, Italy, Sweden and the UK. They all indicated that their manufacturing was in decline.

Ian Harnett, director of European strategy at BT Alex Brown, said: "The implication is that earnings numbers have further disappointments to come. We expect European equities to enter a consolidation phase and remain vulnerable to profit disappointments."

David Bowers, European strategist at Merrill Lynch, said: "At the end of last week, the European markets were around 8 per cent overvalued."

A correction was thus highly likely. Technical factors could also drag the markets lower, he added. "People are now squaring their books ahead of the euro conversion period, when liquidity may dry up."

The FTSE Eurotop 100 index fell 102.23 or 3.8 per cent to 2,563.52 while the broader Eurtop 300 slipped 43.63 to 1,106.3. The FTSE Ebloc 100 index, which focuses on stocks in the euro zone, dropped 38.31 to 923.63.

The sell-off was more marked in the blue chips than in the midcaps, where losses were confined to 1.8 to 2 per cent.

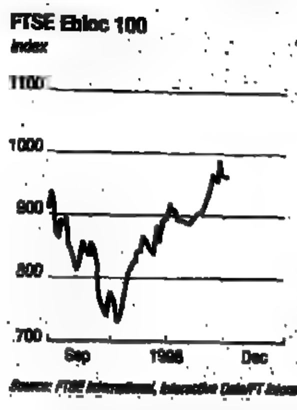
Figures from FTSE International show that the European markets enjoyed a good November, with the FTSE Eurotop 100 index rising about 9 per cent.

The best performing sectors of last month were mainly financial, with life assurance, up 16.3 per cent, leading the way. Ericsson, the Swedish mobile phones group, was the best performing individual stock with a jump of 28.4 per cent.

The worst sector was the construction industry, off 8.5 per cent (ironically the sector was far and away yesterday's best performer). November's worst individual stock was Reckitt & Colman, the household goods company, which issued a profits warning.

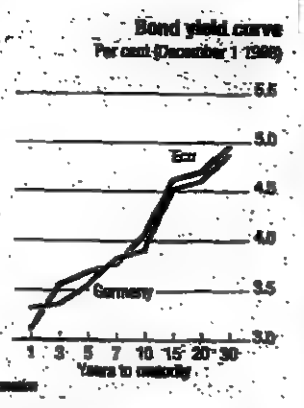
FTSE Ebloc 100

Index



Bond yield curve

Per cent (December 1 1998)



FTSE Actuaries Share Indices — European series

OTHER INDICES

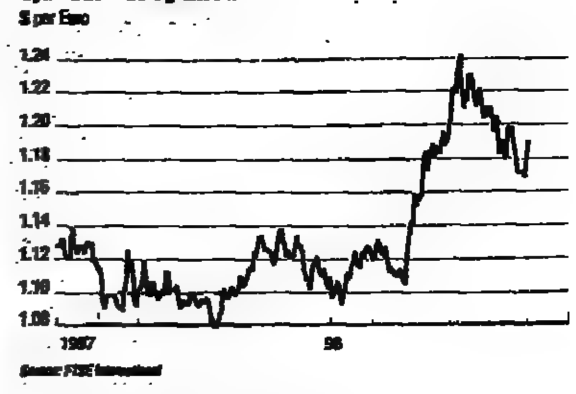
FTSE EUROTOP 300

CURRENCIES & MONEY

FT SYNTHETIC EURO RATES

Synthetic Euro against the dollar

$ per Euro



EUROZONE CURRENCY CONVERGENCE

BONDS

INTEREST RATE SWAPS

EUROZONE CORPORATE BONDS

GOVERNMENT BOND SPREADS vs ECU

EUROZONE CREDIT SPREADS vs ECU

Euronia joins indices battle

By Clay Harris, Banking Correspondent

Another gladiator is joining Europe's battle of the indices. From January 4 Euronia will challenge Eonia in the contest to become the benchmark for the overnight euro market. The winner, if there is one, is likely to become the basis for fixing euro overnight indexed swaps.

Euronia – Euro overnight index average – was launched yesterday by the UK-based Wholesale Markets Brokers' Association. The rival Eonia is being promoted by some 60 banks, mostly from countries within the euro-zone.

The competition parallels that between Euro Libor, promoted by the British Bankers Association, and Euribor, a money-market index advanced by euro-zone banks. There are also rivalries between competing equities and bond indices.

Euronia will be the average interest rate, weighted by volume, of all unsecured euro deposit rates arranged by brokers in London.

It will be limited to trades in which both parties are money market institutions listed by the Financial Services Authority or their overseas branches.

The WMBA intends to publish the rate by 6pm central European time each day. It hopes this will give it an advantage over Eonia, which will be published the next day.

Michael Beales, WMBA chairman, said differences in the method of compiling the rates could lead to material differences between the two. He said the best guess was that London could account for 40 per cent of the overnight euro market.

D-Mark debut for Allied Domecq

INTERNATIONAL BONDS

By Khozem Merchant

Allied Domecq Finance Services, part of the UK spirits and retailing group, returned to the international debt market after an absence of five years, with a debut issue in D-Marks.

The seven-year DM500m offering, arranged by Warburg Dillon Read, was priced to yield 90 basis points over the relevant German bund and was unchanged in secondary trading.

This is broadly consistent with recent comparable issues, such as that by DSM, the Dutch state mines and chemicals company. DSM's bond, issued two weeks ago, was of similar volume and maturity and is now trading at 92 basis points over German bunds. Institutions from continental Europe bought the Allied offering.

Over the past five years Allied has steadily been disposing of assets, such as its food interests in the UK, and reducing its debt. The choice of D-Marks partly reflects the company's income and asset base, which has shifted away from sterling towards the Germany market over the past five years.

In the past 12 months the company has repaid a £75m debenture and a £200m convertible bond. It will also redeem a £150m bond that matures in February.

Yesterday's offer, the proceeds of which will be used to refinance existing debt, is part of a $2bn global borrowing programme that will include one or two further issues in the next year.

AC Fiorentina, the Italian soccer club at the top of the country's premier Series A league, this week became the second domestic club to issue an asset-backed floating-rate note. The 12-year L67.5bn bond was priced to yield 150 basis points over 12-month lira Libor.

The note is secured by a loan from Merrill Lynch, which will be repaid from revenues from season ticket sales and gate receipts. The club has an average home gate of 79 per cent at its 47,000 capacity stadium.

AC Fiorentina follows Lazio, another Italian club, and Real Madrid of Spain, in launching an asset-backed deal. Merrill Lynch, which arranged the issue, said more clubs would follow as they recognised the value of underlying assets, such as cash-flow. Proceeds help clubs to buy players, an increasingly costly commodity since the European Commission made its landmark Bosman ruling giving players freedom of movement.

Turkey added DM200m to the three-year DM600m bond issued last month. The original offering was priced to yield 608 basis points over German bunds and had tightened to 575 basis points by yesterday.

BP America made its first offering since its recent merger with Amoco. The five-year $300m deal, arranged by J.P. Morgan, was priced to yield 50 basis points over US Treasuries and was trading at the re-offer price after launch.

BP America, whose rating is currently under review with positive implications, is rated Aa2 by Moody's Investors Service and AA by S&P.

Some market dealers said the issue was priced at least five basis points too tightly, and that it had suffered correspondingly in the secondary market.

DaimlerChrysler issued a four-year $200m bond, which was lead-managed by ABN AMRO.

The issue was priced to yield 73 basis points over the relevant US Treasury and tightened to 72 basis points before widening narrowly to 73 basis points.

The issue was the first by the merged DaimlerChrysler group and was targeted at retail investors in Europe.

New international bond issues

Borrower	Amount m.	Coupon %	Price	Maturity	Fees %	Spread bp	Book-runner
■ US DOLLARS							
BP America	300	5.00	99.911R	Dec 2003	0.30R	+50(4¼%Nov03)	JP Morgan Securities
GECC	250	5.25	98.841R	Dec 2010	0.35R	+67(4¾%Nov08)	Deutsche Bank
Holderbank Capital Corp	200	5.50	99.765R	Dec 2003	0.375R	+100(Nov03)	CSFB
DaimlerChrysler (UK) Holding	200	5.25	99.848R	Dec 2002	0.25R	+73(5⅝%May01)	ABN Amro
DFCC Bank(a)‡	65	(a1)	100.00	Dec 2008	undisc	-	ABN Amro
■ D-MARKS							
Allied Domecq Fin Services	500	4.75	99.82R	Dec 2005	0.375R	+90§	Warburg Dillon Read
Republic of Turkey(b)	200	9.50	undisc	Nov 2001	undisc	-	Commerzbank/Deutsche
■ ITALIAN LIRE							
Public Power Corp‡	340bn	(c)	99.78R	Jan 2004	0.20R	-	CSFB
■ GUILDERS							
Wolters Kluwer	400	5.125	99.59R	Dec 2005	0.40R	+130§	Rabobank International

Final terms, non-callable unless stated. Yield spread (over relevant government bond) at launch supplied by lead manager. ‡ Floating-rate note. R: fixed re-offer price; fees shown at re-offer level. a) Principal guaranteed by Asian Dev Bank and interest by Sri Lanka. a1) 6-mth Libor +200bp. b) Fungible with DM600m. Plus 5 days accrued. c) 6-mth Libor +66bp. § Over interpolated yield.

Economic data lift European prices

GOVERNMENT BONDS

By Arkady Ostrovsky in London and John Labate in New York

The markets rallied yesterday fuelled by fresh news of economic deceleration in Europe and a further slide in the US equity market.

Purchasing managers indices across Europe suggested a sharp economic slowdown in the fourth quarter, while showing no price pressure in the manufacturing sector. German PMI fell to its lowest since it was introduced in April 1996.

The question economists are asking themselves is how long can bonds benefit from an economic slowdown before investors start worrying about widening budget deficits and oversupply of government debt – illustrated last week by Japan.

Jeremy Hawkins of the Bank of America said investors should not be misled by yesterday's PMI data because the data did not include services. "The danger is that if you lower interest rates too quickly on the basis of slowing manufacturing, you give a boost to an already strong service sector, which can translate into inflation, which would be bad news for the bonds."

Most investors in Europe focused on the long end of the curve, while the short end remained constrained by little hope of an immediate German interest rate cut.

The December future contract on the 10-year German bund closed 0.06 higher at 114.53. The March contract on the UK 10-year gilt rose by 0.11 to 117.32.

Mark Capleton of HSBS said European bond markets also benefited from a continuing decline in Japanese government bond prices.

Brady bonds have also slipped over the past week, with average spreads over US Treasuries widening from 960 to 1,050 basis points, according to the J.P. Morgan Emerging Markets Bond index. Jose Luis Daza of J.P. Morgan said the drop reflected a price correction after two months of cautious improvement in emerging market paper.

US Treasuries were below their early morning highs by midday as they continued to trade off changes in equity prices and investors reallocated holdings between the two markets.

By midday the 30-year Treasury bond was $\frac{1}{32}$ higher at $102\frac{27}{32}$, sending the yield lower to 5.058 per cent. Ten-year bonds rose $\frac{5}{32}$ to $100\frac{1}{32}$, yielding 4.682 per cent and two-year notes $\frac{1}{32}$ to $100\frac{1}{32}$, yielding 4.459 per cent.

The monthly index of economic activity by the National Association of Purchasing Management fell slightly to 48.8, an indicator of weakness generally in line with expectations. Analysts were quick to note that the NAPM reading was the sixth month in which the index was below 50, a sign of industrial contraction.

NEWS DIGEST

EQUITIES

Lower trading fees eat into net surplus at LSE

Buoyant listing fees and strong sales of information services helped the London Stock Exchange raise its income by 6.5 per cent to £76.2m in the six months to September 30 but an 8 per cent drop in trading income, following reductions in trading fees introduced in October last year, saw the surplus after tax and interest fall to £15.8m from £18.3m in the same period last year.

Gavin Casey, chief executive, said the exchange would concentrate in the second half on the details of its tie-up with the Deutsche Börse in Frankfurt to create a single European trading platform. The LSE spent nearly £1m during the year on promoting long-term share ownership for private investors in the UK, and said it planned further "share aware" promotions next autumn. **Vincent Boland**

CLEARING

French house to expand

Clearnet, a clearing house set up by the Paris Bourse for over-the-counter trading of French government debt, is to extend its services to German federal bonds from January 4, less than two months after its launch.

The move, which follows a series of recent innovations in French financial markets, aims to help establish Paris as the euro-zone's dominant financial centre after January's introduction of the single currency. In the long term, Clearnet's objective is to handle OTC transactions on government bonds from all euro-zone countries.

Clearnet offsets transactions agreed between primary dealers in French debt, which end up settling a reduced number of trades at the end of the day. All trades are settled with only one counterparty – the clearing house itself – minimising settlement risk. **Samer Iskandar, Paris**

DERIVATIVES

FOA gives year 2000 guidance

The Futures and Options Association, which represents users of London's derivatives markets, has published guidelines setting out a uniform standard for compliance with year 2000 issues.

The guidelines follow consultations with members of the London Exchanges – which include the London International Financial Futures and Options Exchange, the International Petroleum Exchange, the London Metal Exchange, and OMLX – a London-based market for Swedish financial products – and the London Clearing House, which acts as the clearing and settlement agent for the City's derivatives markets.

The FOA's move follows a test run involving 18 members of the FOA covering all aspects of the derivatives industry in London. **Vincent Boland**

WORLD BOND PRICES

BENCHMARK GOVERNMENT BONDS

Dec 1	Red Date	Coupon	Bid Price	Bid Yield	Day chg yield	Wk chg yield	Month chg yld	Year chg yld
Australia	01/01	8.750	108.2818	4.88	+0.03	-0.14	+0.25	-0.80
	08/08	6.750	128.1734	5.04	-	-0.21	+0.08	-1.17
Austria	07/00	5.875	103.8100	3.39	-0.05	-0.13	-0.18	-1.08
	01/08	5.000	105.4300	4.14	-0.05	-0.10	-0.28	-1.39
Belgium	01/00	4.000	100.7600	3.29	-0.03	-0.12	-0.18	-0.98
	03/08	8.750	111.7700	4.19	-0.03	-0.07	-0.13	-1.40
Canada	12/00	5.000	100.9100	4.73	-0.08	-0.17	+0.18	+0.27
	06/08	6.000	108.1400	4.92	-0.08	-0.23	-0.14	-0.65
Denmark	11/00	8.000	108.2900	3.92	-	-0.01	-0.18	-0.76
	11/07	7.000	119.5500	4.32	-0.08	-0.16	-0.37	-1.80
Finland	01/99	11.000	100.8098	2.82	-0.05	-0.12	-0.23	-1.45
	04/08	6.000	113.9580	4.17	-0.05	-0.12	-0.31	-1.47
France	07/00	4.000	101.0100	3.25	+0.01	-0.08	-0.07	-0.98
	10/05	7.750	124.3100	3.88	-0.04	-0.12	-0.24	-1.50
	10/08	8.500	130.2300	3.89	-0.06	-0.12	-0.28	-1.45
	04/29	5.500	110.0300	4.88	-0.02	-0.12	-0.39	-1.14
Germany	06/00	4.000	101.0000	3.30	-	-0.08	-0.10	-0.88
	10/05	6.500	115.6100	3.85	-0.01	-0.09	-0.21	-1.40
	07/08	4.750	108.3900	3.93	-0.09	-0.10	-0.21	-1.52
	01/28	5.625	111.8090	4.87	+0.04	-0.14	-0.38	-1.18
Ireland	10/01	6.500	108.1000	3.48	-0.01	-0.10	-0.20	-1.72
	08/08	6.000	114.3200	4.17	-0.04	-0.13	-0.24	-1.88
Italy	04/01	4.500	102.3900	3.43	-0.03	-0.13	-0.25	-1.85
	07/03	4.500	103.6200	3.64	-0.02	-0.12	-0.29	-1.78
	05/08	5.000	106.6300	4.13	-0.04	-0.14	-0.34	-1.70
	11/27	6.500	121.7400	5.07	-0.01	-0.13	-0.34	-1.28
Japan	12/00	6.900	113.1810	0.38	+0.08	+0.12	+0.05	-0.02
	12/03	4.100	118.2720	0.80	+0.08	+0.18	+0.15	-0.48
	06/08	1.800	106.9490	1.14	+0.05	+0.18	+0.29	-0.68
	03/18	2.700	112.8820	1.90	+0.08	+0.23	+0.43	-0.74
Netherlands	06/00	9.000	107.7800	3.34	-0.01	-0.08	-0.10	-0.86
	07/08	5.250	109.3200	4.06	-0.01	-0.08	-0.17	-1.38
New Zealand	02/01	8.000	106.0826	4.88	+0.08	-0.08	-0.20	-1.94
	07/09	7.000	111.9337	5.50	-0.07	-0.15	+0.11	-1.22
Norway	01/99	9.000	100.0600	7.98	+0.05	+0.06	+0.17	+3.66
	01/07	6.750	109.3500	5.30	+0.01	-0.03	-0.23	-0.29
Portugal	03/00	5.375	102.3480	3.48	-	-0.08	-	-1.41
	06/08	5.375	108.5800	4.26	-0.02	-0.10	-0.22	-1.67
Spain	04/00	6.750	104.4600	3.30	-0.02	-0.12	-0.17	-1.38
	01/08	6.000	113.3200	4.21	-0.05	-0.12	-0.27	-1.53
Sweden	05/00	10.250	108.8870	3.64	-	-0.10	-0.37	-1.88
	05/08	6.500	116.7843	4.29	-0.05	-0.16	-0.34	-1.90
Switzerland	06/00	4.500	104.4300	1.40	-	-0.02	+0.25	-0.40
	01/08	4.250	115.3000	2.36	-0.02	-0.05	-0.24	-1.14
UK	11/01	7.000	105.3700	5.00	-0.04	-0.18	-0.21	-2.08
	12/03	6.500	108.1100	4.67	-0.04	-0.18	-0.28	-1.98
	10/08	9.000	134.1700	4.54	-0.04	-0.20	-0.43	-1.86
	12/28	6.000	127.1300	4.37	-0.03	-0.27	-0.45	-2.03
US	09/00	4.500	100.0285	4.48	-0.11	-0.21	+0.28	-1.23
	08/03	5.250	103.2164	4.48	-0.06	-0.21	+0.25	-1.38
	05/08	5.625	106.9029	4.71	-0.06	-0.16	+0.10	-1.14
	08/28	5.500	105.7501	5.12	-	-0.15	-0.03	-0.85
ECU	07/00	4.000	101.0000	3.34	-0.02	-0.10	-0.12	-1.30
	04/08	5.250	109.5800	4.00	-0.08	-0.12	-0.27	-1.60

London closing. * New York mid-day. Source: Interactive Data/FT Information

Yields: Local market standard/Annualised yield basis. Yields shown for Italy exclude withholding tax at 12.5 per cent payable by nonresidents.

10 YEAR BENCHMARK SPREADS

Dec 1	Bid Yield	Spread vs Bunds	Spread vs T-Bonds		Bid Yield	Spread vs Bunds	Spread vs T-Bonds
Australia	5.04	+1.12	+0.38	New Zealand	5.51	+1.59	+0.85
Austria	4.16	+0.24	-0.50	Norway	5.33	+1.41	+0.67
Belgium	4.24	+0.32	-0.42	Portugal	4.26	+0.34	-0.40
Canada	4.92	+1.00	+0.26	Spain	4.34	+0.42	-0.32
Denmark	4.27	+0.35	-0.39	Sweden	4.31	+0.39	-0.35
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Source: Interactive Data/FT Information.

EMERGING MARKET BONDS

Dec 1	Red date	Coupon	S & P Rating	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Sprd vs US
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

BOND FUTURES AND OPTIONS

France / Germany / Italy / Spain / UK / US / Japan

	Open	Sett price	Change	High	Low	Est. vol.	Open int.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

US CORPORATE BONDS

Nov 30	Red. date	Coupon	S & P Rating	Bid price	Bid yield	Day's chge yield	Mth's chge yield	Sprd vs Govts
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

US INTEREST RATES

[illegible]	[illegible]

INTERNATIONAL BONDS

Dec 1	Red date	Coupon	S & P Rating	Bid price	Bid yld	Day's chge yld	Mth's chge yld	Spread v Govts
■ EURO DM								
EIB	08/07	5.750	AAA	111.0000	4.14	-0.05	-0.19	+0.18
Spain	01/07	5.750	AA	110.2500	4.23	+0.01	-0.15	+0.27
Philip Morris	03/04	5.375	A	104.0000	4.33	-0.02	-0.22	+0.61
Finland FRN	09/02	3.531	AA	100.5289	2.89	-	-0.19	-0.89
■ EURO FFR								
Austria	01/04	6.500	AAA	107.6800	3.78	-0.01	-0.18	+0.17
Abbey Nat	03/04	6.000	AA	109.2900	3.98	-0.03	-0.18	+0.26
Cred Foncier	02/04	9.125	A	122.3500	4.13	-0.01	-0.16	+0.52
3CIF FRN	12/01	3.617	AA-	99.6749	3.31	-0.02	-0.16	-0.06
■ EURO LIRA								
EIB	02/07	7.000	AAA	118.8900	4.22	-0.04	-0.29	+0.09
Abbey Nat	02/02	6.500	AA	109.0600	3.75	+0.01	-0.18	+0.14
Walt Disney	06/00	8.625	A	107.0600	3.81	-0.02	-0.18	+0.32
EIB FRN	03/01	4.743	AAA	100.0290	3.29	+0.02	-0.19	-0.20
■ EURO £								
EIB	12/07	7.625	AAA	116.7500	5.24	-0.08	-0.46	+0.82
Dresdner Bk	12/07	7.750	AA-	108.8873	6.42	-0.08	-0.45	+1.80
British Gas	03/00	7.625	A+	101.7448	6.17	-0.02	-0.23	+0.93
Abbey Nat FRN	02/02	7.136	AA	100.1498	4.90	-	-0.24	+0.10
■ EURO $								
EIB	04/07	7.250	AAA	113.3990	5.23	-0.05	+0.05	+0.52
ABN Amro	08/07	7.125	AA-	105.1354	6.32	-0.05	+0.18	+1.71
Quebec	01/07	7.000	A+	108.3074	5.71	-0.07	+0.18	+1.10
Citicorp FRN	02/04	5.312	A+	96.0286	6.44	-0.05	+0.15	+1.98
■ EURO C$								
Bayer L-Bk	06/04	9.500	AAA	120.2286	5.38	-0.12	-0.08	+0.18
Toronto	05/04	8.500	AA+	115.2309	5.22	-0.12	-0.06	+0.12
Bell Canada	07/99	10.025	A+	102.1132	5.18	-0.10	+0.28	+0.28
Deutsche B FRN	09/02	5.875	AA+	101.7693	5.36	-0.14	+0.10	+0.52
■ EURO YEN								
World Bank	03/02	5.250	AAA	115.4573	0.61	+0.06	+0.13	-0.17
Spain	03/02	5.750	AA	116.8972	0.57	+0.08	+0.13	-0.11
Cred Foncier	08/02	4.750	A	113.2065	1.07	+0.08	+0.15	+0.38
Italy FRN	07/29	0.461	AA	100.0523	0.28	+0.03	+0.28	-0.01

London closing. Source: Interactive Data/FT Information

Standard & Poor's ratings. Yields: Local market standard/annualised basis.

UK BONDS

FTSE Actuaries Government Securities

Price Indices UK Gilts	Tue Dec 1	Day's chge %	Accrued interest	xd adj ytd	Total Return	Duration Years	Yield	% Weight
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

UK Indices

Index-linked	Tue Dec 1	Day's chge %	Accrued interest	xd adj ytd	Total Return	% Weight
1 Up to 5 years (2)	225.77	0.10	0.89	5.92	1175.81	15.67
2 Over 5 years (9)	249.54	0.39	1.61	5.96	1361.48	84.33
3 5-15 years (5)	235.16	0.30	1.35	5.34	1267.98	43.42
4 Over 15 years (4)	262.30	0.43	1.90	6.41	1426.07	40.91
5 All stocks (11)	245.01	0.34	1.43	5.89	1328.35	100.00

UK GILTS PRICES

Notes	Yield Int	Yield Red	Price £	+ or -	52 week High	52 week Low
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Other Fixed Interest

Notes	Yield Int	Yield Red	Price £	+ or -	52 week High	52 week Low
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CURRENCIES & MONEY

Sterling and dollar put in the stocks

MARKETS REPORT

By Alan Beattie

Sterling weakened against the D-Mark yesterday as sharp drops in UK equity prices spilled over into the currency markets.

A hefty correction in the Dow on Monday helped to drag stock market prices lower in the UK.

The pound took its cue from this to fall against European currencies, the move in turn rebounding on the dollar and pulling it lower against the D-Mark.

At one point sterling had lost two pfennigs against the D-Mark and fell to the DM2.77 level.

But towards the end of trading it recovered slightly. It closed down against the D-Mark at DM2.773 at the end of trading in London, around half a per cent lower than its close of DM2.791 on Monday.

The dollar also took back some of its losses in late London trading to close at DM1.678, down from DM 1.691 on Monday. But the dollar's fall also took it lower against the yen, closing down at Y121.9, one yen lower than Monday's close of Y122.9.

■ "The currency markets across the board were playing chase the equity price today," said Jim O'Neill, chief currency economist at Goldman Sachs in London.

Mr O'Neill added that with the focus in recent days shifting to prospects for the euro, market participants could have begun to perceive European currencies as a relatively good bet.

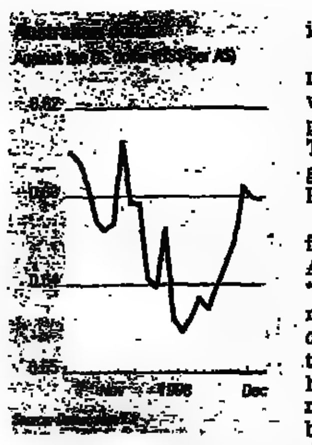
"Traders might well see the DMark as a safe haven at a time of equity market weakness," he said.

Several rumours have floated around the market in the past few days about large sell-offs of sterling as part of unwinding of ecu arbitrage trades.

The well-known divergence between the theoretical and market values of the ecu, at one point as large as 160 basis points, has shrunk to less than 50 basis points in recent weeks. Since sterling is 12.5 per cent of the ecu, any attempt to liquidate these positions could see large sales of sterling.

On Monday there was a rumour that the Banque de France were further trying to squeeze the gap between market and theoretical by selling ecus for D-Marks.

But Mr O'Neill thought that this was no more than a good story. "Everyone conjectures a story about ecu arbitrage, but I think it is somewhat fanciful," he said.



■ The Australian dollar bounced around yesterday as the divergent forces of a still strong economy but weak commodity prices played a tug of war with the currency.

After turbulence in late European trading the Aussie closed at $0.630, little changed from its close on Monday and up from the levels of $0.626 that it dipped to in Monday's US trading.

"The Aussie dollar has managed to break the link with commodities over the past couple of months," said Tim Harris, market strategist at National Australia Bank in London.

Mr Harris said that two factors had propped up the Aussie during that time. "First, hedge funds who had margin calls elsewhere closed out short positions in the Aussie. Second, there have been persistent rumours of overseas players building up a war chest in the currency for a takeover."

The Australian government's "four pillars" policy of preventing domestic mergers between any of the four large banks in the country has paradoxically increased talk of a bid from abroad.

"But this weekend [Peter] Costello, the Treasurer, said it was in Australia's interest to run its own banks," said Mr Harris.

■ The Canadian dollar held up well yesterday after Monday's elections in Quebec returned the separatist Parti Quebecois (PQ) to power in the province.

The secession threat has been seen as a drag on the "loonie" in the run up to the election. But although the PQ retained a majority in the Quebec assembly, they actually polled fewer votes than the pro-union Liberal Party. This suggests a referendum victory for the secessionists is unlikely.

At the close of London trading yesterday the Canadian dollar was at C$1.5328, down from C$1.5295 on Monday.

POUND IN NEW YORK

Dec 1	—Latest—	—Prev. close—
£ spot	1.6540	1.6465
1 mth	1.6521	1.6476
3 mth	1.6491	1.6436
1 yr	1.6363	1.6171

OTHER CURRENCIES

Dec 1	£	$
Czech Rp	50.1307 - 50.2288	30.3400 - 30.3810
Hungary	[illegible]	[illegible]
Iran	[illegible]	[illegible]
Kuwait	0.5008 - 0.5021	0.3032 - 0.3037
Peru	5.1681 - 5.1745	3.1280 - 3.1300
Poland	5.7402 - 5.7614	3.4800 - 3.4850
Russia	[illegible]	[illegible]
U.A.E.	6.0682 - 6.0734	3.6720 - 3.6731

POUND SPOT FORWARD AGAINST THE POUND

Dec 1		Closing mid-point	Change on day	Bid/offer spread	Day's Mid high	low	One month Rate	%PA	Three months Rate	%PA	One year Rate	%PA	Bank of Eng. Index
Europe													
Austria	(Sch)	19.5118	-0.1236	[illegible] - 227	19.6474	19.4881	19.4549	3.6	19.3543	3.2	18.9784	2.7	103.7
Belgium	(BFr)	57.2000	-0.3885	[illegible]	57.6400	57.1378	57.029	3.6	56.7357	3.2	55.6113	2.8	103.7
Denmark	(DKr)	10.5442	-0.0658	369 - 515	10.6190	10.5330	10.5228	2.4	10.479	2.5	10.3106	2.1	107.8
Finland	(FM)	8.4321	-0.0546	254 - [illegible]	8.4910	8.4240	8.4078	3.5	8.3635	3.2	8.2004	2.7	83.2
France	(FFr)	9.2992	-0.0617	953 - 031	9.3647	9.2904	9.2718	3.5	9.2232	3.3	9.0387	2.8	107.2
[illegible]													

DOLLAR SPOT FORWARD AGAINST THE DOLLAR

Dec 1		Closing mid-point	Change on day	Bid/offer spread	Day's mid high	low	One month Rate	%PA	Three months Rate	%PA	One year Rate	%PA	JP Morgan index
Europe													
Austria	(Sch)	11.8080	-0.09	025 - 091	11.8140	11.7960	11.7898	2.4	11.7677	1.6	11.883	1.5	103.6
Belgium	(BFr)	34.6100	-0.28	[illegible]	34.9500	34.5580	34.542	2.4	34.465	1.8	34.02	1.7	103.8
Denmark	(DKr)	6.3800	-0.048	775 - 825	6.4385	6.3767	6.3729	1.3	6.3635	1.0	6.3105	1.1	106.8
Finland	(FM)	5.1020	-0.0398	[illegible]	5.1480	5.0992	5.0939	1.9	5.061	1.7	5.016	1.7	81.9
France	(FFr)	5.6257	-0.0445	[illegible]	5.6773	5.6220	5.619	2.3	5.6021	1.7	5.5302	1.7	105.7
[illegible]													

WORLD INTEREST RATES

MONEY RATES

[illegible]

EURO CURRENCY INTEREST RATES

[illegible]

CROSS RATES AND DERIVATIVES

EXCHANGE CROSS RATES

[illegible]

EMS EUROPEAN CURRENCY UNIT RATES

[illegible]

UK INTEREST RATES

LONDON MONEY RATES

[illegible]

Est. vol. total, Calls 5724 Puts 21541. Previous day's open int., Calls 581831 Puts 607680

BASE LENDING RATES

	%		%		%
Adam & Company	6.75	Exeter Trust Limited	7.75	●Singer & Friedlander	6.75
Allied Irish Bank (GB)	6.75	Financial & Gen Bank	8.00	Smith & Williamson	6.75
●Henry Ansbacher	6.75	●Robert Fleming & Co	6.75	Sun Bank	6.75
Banco Bilbao Vizcaya	6.75	Habib Bank AG Zurich	6.75	TSB	6.75
Bank of Cyprus	6.75	Heritable & Gen Inv Bk	6.75	United Bank of Kuwait	6.75
Bank of Ireland	6.75	C. Hoare & Co	6.75	Unity Trust Bank Plc	6.75
Bank of India	6.75	●SG Hambros Bank & Trust	6.75	Whiteaway Laidlaw	6.75
Bank of Scotland	6.75	Hongkong & Shanghai	6.75	Yorkshire Bank	6.75
Barclays Bank	6.75	Investec Bank (UK) Ltd	6.75		
Brit Bk of Mid East	6.75	Julian Hodge Bank	6.75		
●Brown Shipley & Co Ltd	6.75	●Leopold Joseph & Sons	6.75		
Citibank NA	6.75	Lloyds Bank	6.75		
Clydesdale Bank	6.75	Midland Bank	6.75		
The Co-operative Bank	6.75	NatWestminster	6.75		
Coutts & Co	6.75	●Rea Brothers	6.75		
Cyprus Popular Bank	6.75	Royal Bk of Scotland	6.75		
Duncan Lawrie	6.75	Scottish Widows Bank	6.75		

● Members of London Investment Banking Association

Oil prices slip on PetroFina takeover news

MARKETS REPORT

By Paul Solman

World crude prices slipped again as the oil industry digested the implications of Total's bid for PetroFina.

The benchmark crude contract fell to $10.06 a barrel on London's International Petroleum Exchange at one stage, less than half its level just a year ago.

"Disappointment over last week's Opec decision and the lack of cold weather in the US continue to be the fundamentals driving the market," one analyst said.

Yesterday's announcement that Iraq would resume oil exports under the United Nations "oil for food" scheme as soon as Wednesday also hit prices, he said. The market had hoped for a longer delay.

In late trading, January Brent blend on the IPE was $10.30 against Monday's close of $10.46.

Asarco, the US mining group, announced late on Monday it would suspend operations at its El Paso copper smelter for three years from February 1999.

The company said this would result in substantial savings and the copper concentrates usually processed at El Paso would be sold to other producers.

"During the suspension, El Paso will be maintained so that it may be returned to full operations when the concentrate market returns to a more normal balance in future," Asarco said.

Analysts said Asarco's announcement was likely to have little impact on copper prices.

"The move reflects the current state of the market. US producers are close to break-even or even losing money because of the low copper prices," said Jim Lennon at Macquarie Equities.

Robin Bahr at Brandeis said: "It could put a floor under copper prices if the perception is that producers will follow through with production cuts."

On the London Metal Exchange, three-month copper closed up $4 at $1,582 a tonne.

Gold prospects now open for business in Tanzania

Optimism is growing that country offers fantastic prizes and the government will involve foreign investors, writes **Mark Turner**

Next year could be great for mining and exploration in Tanzania. Despite some discouraging news that South African JCI was pulling out, the end-November launch of Golden Pride, Tanzania's first large-scale gold mine, at last confirmed what the optimists had been saying for years.

After decades of false starts, obstructive governments and price uncertainty, Tanzania's vast gold potential stands its best-ever chance of being realised.

In a continent where South Africa and Ghana have dominated exploration, optimism has been growing for the past three years that east Africa's sleeping giant offers some fantastic prizes, and that – more importantly – the government will involve foreign investors.

Metals Economics Group, a Canadian consultancy, says Tanzania has attracted more exploration expenditure this year than any other African country, including South Africa, with spending in non-ferrous minerals reaching $57.7m, some 13.3 per cent of the African total. That compares with $59.3m last year – only 9.8 per cent of the total $606.6m – behind South Africa and Ghana.

Over the next five years, gold production is expected to triple from five to 15 tonnes a year, and maybe more, recently inspiring the resource information unit in Perth, Australia, to describe Tanzania as having more gold potential than any other country north of the Limpopo river.

This interest is not a new phenomenon. Since the 1900s geologists have highlighted Tanzania's attractive geology, with the rich greenstone belts around Lake Victoria bearing a remarkable resemblance to the eastern goldfields of Western Australia and Canada.

What has changed is a recent turnround by a government previously characterised by socialist self-reliance and a distrust of foreign interference. A new investment code exempts foreigners from import duty on equipment and sales tax, and crucially allows the repatriation of profits.

Continual battles over VAT, which increases drilling and analysis costs by 20 per cent, have led to a strong war of words between government and the industry, but few doubt that – in principle at least – Tanzania is now open for business.

Golden Pride, a joint venture between Resolute Resources and Samax Gold, produced its first gold ingot at the end of November, and is expected to produce 150,000 ounces a year at $210 an ounce: far enough below world prices of $300 to be very viable. Optimism over the project and other Samax holdings recently prompted Ghana's Ashanti Goldfields to buy the Canadian company outright.

Sam Jonah, Ashanti chief executive, said this year that subsequent consolidation would open the way to one of the biggest gold mines on the continent, with an output of about 400,000 troy ounces a year at a cost of $180 an ounce.

Other companies, still concerned about gold prices, are playing a game of wait-and-see, and it will not be clear until 1999 whether this year's activity will be replicated. Nevertheless, few doubt the potential is there – it appears more a matter of when, rather than whether, Tanzania's minerals will be exploited.

Sutton Resources' Bulyanhulu project is well advanced and contains an estimated 7.2m ounces of gold, while Tanganyika Gold boasts a prospect with resources of more than 750,000 ounces. Anglo American's Buzwagi is estimated to contain 1m ounces. Its Nyamulilima Hill reserves could exceed 2m ounces.

"This prospect looks destined to come on stream in the next five years," said Julian Ogilvie Thompson, chairman, in June. Recent speculation that Anglo-American was losing interest has been quashed, while word has spread that Australian miner Delta is looking for new investments.

Samuel Lwakatare, chairman of the Tanzania Chamber of Mines, is optimistic. "We are headed for a turning point where previously the mining sector was dominated by exploration," he said, adding that the country could produce 36 tonnes a year by 2001 – 10 per cent of gross domestic product.

That would be a profound turnround from the current situation, where Tanzanian gold mining is dominated by thousands of artisanal diggers, who produce only seven tonnes a year and account for just 2 per cent of the country's GDP.

Dar es Salaam also hopes to boost this sector with Meremeta, a recent joint venture involving the Tanzania military, which will organise artisanal marketing and curb smuggling.

Gold is not the only encouraging prospect. The Kabanga nickel project, a joint venture between Anglo American and Sutton Resources, has the potential to produce 100,000 tonnes a year of concentrated ore containing 15 per cent nickel, 1.2 per cent cobalt and 2.5 per cent copper, with a minimum life of 14 years.

Tanzania is already a significant diamond producer with exports worth about $15m for the past two years, mostly under the control of Williamson Diamonds, a De Beers subsidiary. The government has also highlighted commercial opportunities in phosphates, salt, kaolin, coal and tin.

Nevertheless, companies still complain that high levels of bureaucracy, complicated taxation and inadequate electric power are hampering progress.

Perhaps most irritating is the state of Tanzania's crumbling roads. "A well-maintained infrastructure is critical to the development of the mining industry in Tanzania," says Matthew Yates, from Tanganyika Gold.

The area around Lake Victoria closely resembles goldfields in Australia and Canada Panos Pictures

NEWS DIGEST

DERIVATIVES

UBS to switch trading in favour of precious metals

UBS said yesterday that it is pulling out of energy, base metals and electricity derivatives trading to concentrate on precious metals. The Swiss bank said it would begin immediately to wind down the operations, which are part of its Warburg Dillon Read investment banking arm.

About 20 jobs will be lost, most of them in London. The bank said that, as part of the move, the remaining precious metals business would be integrated into the bank's foreign exchange operations.

Some sources suggested the move stemmed from a plan to reduce trading exposure. WDR said it was concentrating on how it allocated sources. The bank denied any specific problems, like the previously announced SFr1.8bn losses in equity derivatives or a SFr984m after-tax loss on exposure to Long-Term Capital Management, the US hedge fund.

UBS was created earlier this year by the merger of Union Bank of Switzerland and Swiss Bank Corporation. The commodities businesses, like the troubled derivatives business and LTCM position, were inherited from old UBS.

Analysts said that the energy, base metals and electricity sectors had been a small part of UBS's derivatives trading operations. "They don't really fit with the investment banking business and are probably not worth the risk," one analyst said. "UBS will see more synergies by concentrating on equities and bonds, which are a much bigger part of its business."

Putting precious metals in with foreign exchange operations could also have the effect of making it less easy to see how each activity was performing.
Paul Solman and Clay Harris

WOOL

Australian board voted out

Australian wool growers vented their anger yesterday at the dismal state of the wool market by voting out the board of the Australian Wool Research and Promotion Organisation (AWRAP), the wool research and promotional body.

Wool prices have halved this decade and Australia's wool production has fallen from 1.1m tonnes in 1990 to 630,000 tonnes. Many Australian wool growers are in deep financial difficulty.

Mark Vaile, Australia's minister for agriculture, will appoint a new board. He also announced yesterday the establishment of a task force to assess the wool industry and wool promotion. Wool has steadily lost its share in the world fibre market to cotton and especially synthetics.

While the board has been sacked, none of the proponents of this move have any plans on where to go from here, said David Farley, managing director of Colly Cotton.

A dramatic 73.4 per cent of the biggest gathering of wool growers on record declared their no-confidence in the board of AWRAP – the statutory body responsible for administering more than A$100m a year from a 4 per cent levy on wool growers' sales.

The Woolmark Company, which was called the International Wool Secretariat until June this year, is a subsidiary of AWRAP. **Stephen Wyatt, Sydney**

COMMODITIES PRICES

BASE METALS

LONDON METAL EXCHANGE

(Prices from Amalgamated Metal Trading)

■ ALUMINIUM, 99.7 PURITY ($ per tonne)

	Cash	3 mths
Close	1297-98	1300-01
Previous	1298-7	1299-300
High/low		1306/1298
AM Official	1299-300	1302-02.5
Kerb close		1297-98
Open int.	319,422	
Total daily turnover	58,583	

■ ALUMINIUM ALLOY ($ per tonne)

	Cash	3 mths
Close	1073-78	1103-05
Previous	1073-6	1104-5
High/low		1107/1105
AM Official	1076-80	1106-07
Kerb close		1104-07
Open int.	7,160	
Total daily turnover	885	

■ LEAD ($ per tonne)

	Cash	3 mths
Close	491-2	[illegible]
Previous	495-6	492-3
High/low		496/485
AM Official	496.5-97.0	491-2
Kerb close		486-7
Open int.	40,589	
Total daily turnover	[illegible]	

■ NICKEL ($ per tonne)

	Cash	3 mths
Close	4110-20	4175-85
Previous	4140-50	4205-10
High/low		[illegible]/4175
AM Official	4140-45	4200-205

■ TIN ($ per tonne)

■ ZINC, special high grade ($ per tonne)

■ COPPER, grade A ($ per tonne)

■ HIGH GRADE COPPER (COMEX)

PRECIOUS METALS

■ LONDON BULLION MARKET

Precious Metals continued

■ GOLD COMEX (100 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Vol	Open int
Dec	293.4	+0.9	294.0	292.0	4,767	3,693
Feb	295.9	+0.8	296.7	294.8	47,466	88,711
Apr	297.9	+0.8	298.7	295.9	1,271	18,218
Jun	299.8	+0.7	300.6	298.0	493	15,421
Aug	301.3	+0.7	-	-	116	8,999
Oct	303.0	+0.8	-	-	18	2,459
Total					84,491	143,659

■ PLATINUM NYMEX (50 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Vol	Open int
Jan	352.1	-3.2	356.0	351.0	2,312	11,623
Apr	353.1	-2.7	356.0	351.5	296	1,707
Jul	354.5	-2.7	356.0	356.0	11	266
Oct	355.8	-2.7	-	-	-	295
Total					2,618	14,882

■ PALLADIUM NYMEX (100 Troy oz.; $/troy oz.)

	Sett price	Day's change	High	Low	Vol	Open int
Dec	272.65	-1.35	273.00	271.50	297	423
Mar	271.65	-1.65	273.00	270.50	336	2,168
Jun	269.65	-1.65	-	-	5	9
Total					640	2,716

■ SILVER COMEX (5,000 Troy oz.; Cents/troy oz.)

	Sett price	Day's change	High	Low	Vol	Open int
Dec	486.2	+2.7	488.5	481.5	4,295	2,782
Jan	487.4	+2.5	489.0	489.0	2	84
Mar	491.0	+2.6	494.0	487.5	14,377	48,590
May	494.0	+2.4	497.0	491.0	633	6,069
Jul	496.9	+2.3	[illegible]	497.0	313	6,320
Sep	499.5	+2.2	499.0	499.0	54	1,491
Total					19,679	74,769

ENERGY

■ CRUDE OIL NYMEX (1,000 barrels, $/barrel)

■ CRUDE OIL IPE ($/barrel)

■ HEATING OIL NYMEX (42,000 US galls; c/US galls)

■ GAS OIL IPE ($/tonne)

■ NATURAL GAS IPE

■ NATURAL GAS NYMEX

■ UNLEADED GASOLINE NYMEX (42,000 US galls; c/US galls)

GRAINS AND OIL SEEDS

■ WHEAT LIFFE (100 tonnes; £ per tonne)

■ WHEAT CBT (5,000bu min; cents/60lb bushel)

■ MAIZE CBT (5,000 bu min; cents/56lb bushel)

■ BARLEY LIFFE (100 tonnes; £ per tonne)

■ SOYABEANS CBT (5,000bu min; cents/60lb bushel)

■ SOYABEAN OIL CBT (60,000lbs; cents/lb)

■ SOYABEAN MEAL CBT (100 tons; $/ton)

■ POTATOES LIFFE (20 tonnes; £ per tonne)

■ FREIGHT (BIFFEX) LIFFE ($10/index point)

					Vol	Open int
Jul	850	-20	850	850	16	378
Total					128	2,313

	Close	Prev
BFI	936	941

PULP AND PAPER

■ PULPEX OMLX (US$; 24 air dry tons)

	Sett price	Day's change	High	Low	Vol	Open int
Dec	407.00	-5.25	410.00	407.00	94	291
Mar	432.00	-6.25	435.50	432.00	27	387
Total					121	711

FUTURES DATA

All futures data supplied by CMS.

Tea from the Tea Brokers' Association

Mombasa There was good demand at irregular rates. BP1's of all categories sold at irregularly lower rates with some withdrawals. Early invoices of brighter and mediums PF1's were irregular but on balance sold at about last levels. Later invoices were dearer by about 5-15 cents. Brighter lower mediums were dearer by about 2-5 cents but others easier by 2-8 cents. Neater and colouty plainer sorts were firm to dearer but others easier by about 5-10 cents. Brighter P.Dusts and Dust1's were irregular with all others a strong feature at dearer rates. Secondary grades of all descriptions were easier.

SOFTS

■ COCOA LIFFE (10 tonnes; £/tonne)

■ COCOA CSCE (10 tonnes; $/tonnes)

■ COCOA (ICCO) (SDR's/tonne)

■ COFFEE LIFFE (5 tonnes; $/tonne)

■ COFFEE 'C' CSCE (37,500lbs; cents/lbs)

■ COFFEE (ICO) (US cents/pound)

■ WHITE SUGAR LIFFE (50 tonnes; $/tonne)

■ SUGAR '11' CSCE (112,000lbs; cents/lbs)

■ COTTON NYCE (50,000lbs; cents/lbs)

■ ORANGE JUICE NYCE (15,000lbs; cents/lbs)

					Vol	Open int
May	122.45	-0.30	122.50	122.00	214	1,672
Jul	123.70	-0.55	123.50	123.25	29	1,530
Sep	124.00	-0.25	124.00	123.50	-	165
Nov	124.00	-0.25	-	-	5	474
Total					[illegible]	[illegible]

VOLUME DATA

Open Interest and Volume data shown for contracts traded on COMEX, NYMEX, CBT, NYCE, CME, CSCE and IPE Crude Oil are one day in arrears. Volume & Open Interest totals are for all traded months.

INDICES

■ Reuters (Base: 18/9/31 = 100)

Dec 1	Nov 30	month ago	year ago
1475.6	1477.1	1483.9	1795.5

■ CRB Futures (Base: 1967 = 100)

Nov 30	Nov 27	month ago	year ago
195.42	196.99	-	-

■ GSCI Spot (Base: 1970 = 100)

Nov 30	Nov 27	month ago	year ago
133.48	137.54	146.49	188.82

LME WAREHOUSE STOCKS (tonnes)

Aluminium	+3,300	to	584,850
Aluminium alloy	-40	to	82,540
Copper	+4,425	to	511,450
Lead	[illegible]	to	106,375
Nickel	+102	to	62,358
Zinc	-1,000	to	328,575
Tin	-175	to	7,550

MEAT AND LIVESTOCK

■ LIVE CATTLE CME (40,000lbs; cents/lbs)

■ LEAN HOGS CME (40,000lbs; cents/lbs)

■ PORK BELLIES CME (40,000lbs; cents/lb)

LONDON TRADED OPTIONS

■ ALUMINIUM (99.7%) LME

■ COPPER (Grade A) LME

■ COFFEE LIFFE

■ COCOA LIFFE

■ BRENT CRUDE IPE

LONDON SPOT MARKETS

■ CRUDE OIL FOB (per barrel)

■ OIL PRODUCTS NWE prompt delivery CIF (tonne)

■ NATURAL GAS (Pence/therm)

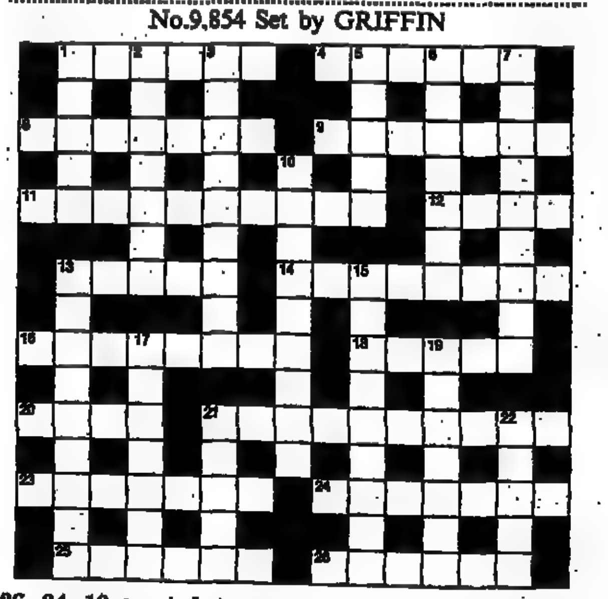
■ OTHER

JOTTER PAD

For solutions to today's crossword call 0891 430060. Calls cost 50p a minute.

CROSSWORD

No.9,854 Set by GRIFFIN



26, 24, 12 created 4, 14, 2 and 17 and 13 down. 21 across appeared in 4, 14 and 1 down in 13. Around 20 My Lady becomes 13 again! These clues have no definition element.

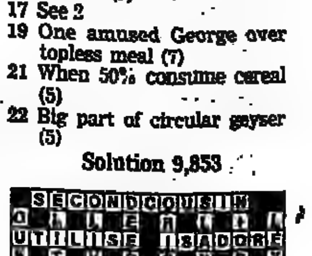
ACROSS

1 Left to retire clutching £2,000 for drink! (6)
4, 14 Ann, mad about Christopher Reeve? (3,3,8)
8 Order detectives back to gallery (7)
9 Menial wanting second shower (7)
11 Commonly a tale-teller in class (10)
12 See 26
13 Called for Penny before getting on (5)
14 See 4
16 Travelling in Goa Mae reveals excessive self-interest (8)
18 Scoundrel is to regret taking work back (5)
20 Airmen reversed one in (4)
21 Actress June takes note (10)
23 Lied about motorway – it is restricted (7)
24 See 26
25 Untidy models undress (6)
26, 24, 12 ??? (6,7,4)

DOWN

1 I laze around (5)
2, 17 Becoming spoilt, one admitted (7,7)
3 Why one lost a lot? (9)
5 Associate with hole in compound (5)
6 Counsellor drives a Rolls (7)
7 Belittle and decline box with silver lining (9)
10 Mother turned it into a battered crisp, specially shaped (9)
13 Gay MP upset Leo (9)
15 Persist if salesman turns critical (9)
17 See 2
19 One amused George over topless meal (7)
21 When 50% consume cereal (5)
22 Big part of circular geyser (5)

Solution 9,853



FT MANAGED FUNDS SERVICE

● FT Cityline Unit Trust Prices are available over the telephone. Call the FT Cityline Help Desk on (+44 171) 873 4378 for more details.

OFFSHORE AND OVERSEAS

BERMUDA (FSA RECOGNISED)

BERMUDA (REGULATED)(**)

CAYMAN ISLANDS (REGULATED)(**)

GUERNSEY (REGULATED)(**)

GUERNSEY (FSA RECOGNISED)

IRELAND (FSA RECOGNISED)

IRELAND (REGULATED)(**)

ISLE OF MAN (FSA RECOGNISED)

ISLE OF MAN (REGULATED)(**)

JERSEY (FSA RECOGNISED)

Offshore Funds and Insurances

FT MANAGED FUNDS SERVICE

● FT Cityline Unit Trust Prices are available over the telephone. Call the FT Cityline Help Desk on (+44 171) 873 4378 for more details.

Royal Bank of Scotland Fd Mgrs (Jersey) Ltd

Royal Bank of Scotland International Ltd

JERSEY (REGULATED)(**)

LUXEMBOURG (FSA RECOGNISED)

Aberdeen Fund Mngrs (Luxembourg) Ltd (u)

American Phoenix Investment Portfolios (u)

Foreign & Colonial Portfolios Fd Sicav(s)

Framlington International Portfolios

Mercury Asset Management - Contd.

LUXEMBOURG (REGULATED)(**)

ACM Offshore Funds

Credit Suisse Asset Mngmt Funds - Contd.

Merrill Lynch Asset Management - Contd.

UBS AG - Contd.

OFFSHORE INSURANCES

FT MANAGED FUNDS SERVICE

● FT Cityline Unit Trust Prices are available over the telephone. Call the FT Cityline Help Desk on (+44 171) 873 4378 for more details.

Royal & Sun Alliance Intl Financial Srvs

Dresdner Bank Investment Group - Contd.

Global Asset Management - Contd.

Jardine Fleming Unit Trusts Ltd

National Mutual Funds Management

Scudder, Stevens & Clark Inc

F.A. Founders Asset Management Ltd

Global Asset Management - Contd.

OTHER OFFSHORE FUNDS

AXA Asset Management

● MANAGED FUNDS NOTES

LONDON SHARE SERVICE

ALCOHOLIC BEVERAGES

	Notes	Price	+ or -	52 week high	low	Volume '000s	Yld Gr's	P/E
Allied Domecq	♣♦	510xd	-6	649	395	1,436	5.0	13.4
Bulmer (HP)		398		413½	291½	3	5.2	15.3
Burn Stewart		16¾	-1¼	48¼	7	65	–	–
Diageo	♣♦	634½	-44½	765	449½	10,728	3.7	19.2
Glenmorangie A	†	687½	—	900	665	–	2.6	18.6
B	†	825	—	955	830	–	1.1	44.7
Highland		265½	—	325	225	325	4.7	11.4
5¼pc Cv Sb Bd		93	-½	100½	88	–	6.0	–
Kirin Y		624¼	-5¼	679¾	416¾	–	1.9	61.4
Matthew Clark	♣	241	—	243	115	3	6.7	8.2
Merrydown		21	—	67½	18½	–	–	♦
Seagram C$		2280½	-43	2294¼	1743½	–	1.3	–

BANKS, RETAIL

BREWERIES, PUBS & REST

BUILDING MATS. & MERCHANTS

CHEMICALS

CONSTRUCTION

CONSTRUCTION - Continued

DISTRIBUTORS

DIVERSIFIED INDUSTRIALS

ELECTRICITY

ELECTRONIC & ELECTRICAL EQPT

ENGINEERING

ENGINEERING - Continued

ENGINEERING, VEHICLES

EXTRACTIVE INDUSTRIES

FOOD PRODUCERS

FOOD PRODUCERS - Continued

GAS DISTRIBUTION

HEALTH CARE

HOUSEHOLD GOODS & TEXT

INSURANCE

INSURANCE - Continued

INVESTMENT TRUSTS

INVESTMENT TRUSTS - Continued

INV TRUSTS SPLIT CAPITAL

هكذا من الأصل

LONDON SHARE SERVICE

OTHER INVESTMENT TRUSTS

The following investment trusts are not eligible for inclusion in the FTSE Actuaries Share Indices.

INVESTMENT COMPANIES

LEISURE & HOTELS

LIFE ASSURANCE

MEDIA

MEDIA - Continued

OIL EXPLORATION & PRODUCTION

OIL, INTEGRATED

OTHER FINANCIAL

PAPER, PACKAGING & PRINTING

PHARMACEUTICALS

PROPERTY

PROPERTY - Continued

RETAILERS, FOOD

RETAILERS, GENERAL

RETAILERS, GENERAL - Continued

SUPPORT SERVICES

SUPPORT SERVICES - Continued

TELECOMMUNICATIONS

TOBACCO

TRANSPORT

TRANSPORT - Continued

WATER

AMERICANS

CANADIANS

SOUTH AFRICANS

TRADED INDEX SECURITIES

AIM

Alternative Investment Market

The Alternative Investment Market, designed primarily for small companies, is regulated by the London Stock Exchange but has less demanding rules than the Official list.

AIM - Continued

GUIDE TO LONDON SHARE SERVICE

Prices and trading volumes for the London Share Service are delivered by Extel, part of Financial Times Information.

Company classifications are based on those used for the FTSE Actuaries Share Indices.

Closing mid-prices are shown in pence unless otherwise stated. For FTSE 100 index constituents and reserves contained in the Trading Volume table on the LSE page, last trade prices at or prior to 4:30pm market close are shown, as these shares are now traded on the Stock Exchange Electronic Trading System ("SETS"). Highs and lows are based on intra-day mid-prices/last trades over a rolling 52 week period.

Trading Volumes are end of day accumulated totals. Dashes indicate that either no trade has taken place during the day or the data is not available for those particular securities. Volumes shown for foreign securities are based on London trading.

Where stocks are denominated in currencies other than sterling, this is indicated after the name. Prices shown for some of these foreign securities are converted into sterling from latest available local Stock Exchange prices.

Symbols referring to dividend status appear in the Notes column only as a guide to yields and P/E ratios. Dividends and Dividend covers are published on Monday.

Earnings used in calculations are based on IIMR "Headline Earnings" formula.

Price/earnings ratios are based on latest annual reports and accounts and, where possible, are updated on interim figures.

Yields are based on mid-prices, are gross, adjusted for a dividend tax credit of 20 per cent and allow for value of declared distribution and rights.

Estimated Net Asset Values (NAVs) are shown for Investment Trusts, in pence per share, along with the percentage discounts (Dis) or premiums (Pm -) to the current closing share price. The NAV basis assumes prior charges at par value, convertibles converted and warrants exercised if dilution occurs.

- * Highs and lows marked thus have been adjusted to allow for capital changes
- † Interim since increased or resumed
- ‡ Interim since reduced, passed or deferred
- ϕ Figures or report awaited
- ♥ Rule 2.1(a)(iv) Overseas incorporated companies listed on an approved exchange.
- ♣ Free annual/interim report available, see details below
- ‡‡ Rule 4.2(a) Irish incorporated non-listed companies
- ¶ Price at time of suspension
- • Indicated dividend yield after pending scrip and/or rights issue
- ♦ Merger bid or reorganisation in progress

[illegible]

This service is available to companies whose shares are regularly traded in the United Kingdom for a fee of £1485 a year for each security shown, subject to the Editor's discretion.

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Up-to-the-second share prices are available by telephone from the FT Cityline service. See Monday's share price pages for details. Calls are charged at 50p per minute at all times.

An international service is available for callers outside the UK, annual subscription £250 stg. Please consult your financial adviser and verify financial pricing information obtained via FT Cityline before making any investment decision.

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For Retail Price Index details call 0891 43 0095

The FT web site

London share prices are available throughout the trading day with a 20 minute delay from our web site, http://www.ft.com, which also has the closing share prices printed on these pages.

Footsie suffers fall after Wall Street reverses

MARKET REPORT

By Steve Thompson, UK Stock Market Editor

A sharp sell-off on Wall Street on Monday and again at the outset of US trading yesterday brought a substantial, if not totally unexpected, correction across global markets.

The urge to take profits was given a further push by a series of gloomy economic reports in the UK, Europe and the US that showed manufacturing sectors were under continued pressure. Interest rate cuts and merger activity have allowed investors to ignore the bad news on corporate earnings.

Such was the extent of the US weakness yesterday, at least at the opening when the Dow dropped almost 130 points, that the FTSE 100 suffered its worst percentage fall this year, sliding 3.6 per cent or 206.4 to 5,537.5.

It was also the third worst points fall in the FTSE 100's history. Not long after London closed, the Dow staged a powerful rally to show only a 25-point slide.

The FTSE 250, meanwhile, lost 1.6 per cent or 80.3 to 4,821.4, and the FTSE SmallCap 1.2 per cent, 25.5, to 2,089.5.

"The only surprise about the shake-out is that it has taken so long to materialise," said one marketmaker, who pointed out that the FTSE 100 index, has risen almost in a straight line since its October 5 low point for the year of 4,648.7.

Wall Street's weakness, which saw the Dow finish 216 points lower on Monday, stemmed from some heavy selling of internet stocks.

The knock-on effect from the US saw Hong Kong fall 4 per cent, and European markets drop sharply.

The recent rise has taken place against a backdrop of big bids and mergers, especially in the oil and banking sectors.

However, it has also coincided with a constant stream of profit warnings and poor corporate results.

Equity strategists have become increasingly uneasy about their growth forecasts with many observers now expecting earnings to show a decline next year, possibly by up to 10 per cent.

There were also doubts about the chance for another interest rate cut in the UK after next week's meeting of the Bank of England's monetary policy committee. "A cautious line on rates will be taken badly by this market," said Richard Jeffrey of CCF Charterhouse.

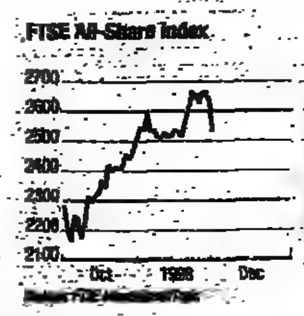
Losses in London stretched across all sectors but were especially severe in the financial areas. Banks, particularly those with close links to Hong Kong, suffered badly. Outside of HSBC and Standard Chartered, the mostly domestic retail banks were weakened by talk of profit downgrades.

There were also profit warnings from middle ranking and small-cap stocks, notably Forminster, the retailer, and Kenwood, the electrical manufacturer.

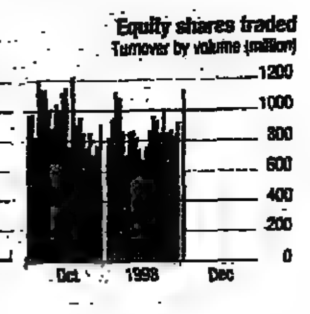
The strategy team at Credit Suisse First Boston said: "What we have experienced is an early end-year rally. Fundamental valuations, despite strong liquidity conditions, are starting to limit the scope for further performance, particularly given the pressure on corporate earnings estimates."

One feature of the day's activity was the high level of turnover in equities. At 6pm 1.13bn shares had changed hands, the highest daily total since October 21.

FTSE All-Share Index



Equity shares traded
Turnover by volume (million)



Source: FTSE International/Datastream

Indices and ratios

FTSE 100	5537.5	-206.4	FT 30	3351.3	-98.4
FTSE 250	4821.4	-80.3	FTSE Non-Fins p/e	21.14	21.71
FTSE 350	2632.6	-89.0	FTSE 100 Fut Dec	5583.0	-217.0
FTSE All-Share	2543.41	-83.45	10 yr Gilt yield	4.74	4.77
FTSE All-Share yield	3.08	2.99	Long gilt/equity yld ratio	1.48	1.61

Best performing sectors

1. Leisure & Hotels -0.1
2. Water -0.5
3. Extractive Industries -0.8
4. Electricity -0.9
5. Residential Oil & Gas? -0.9

Worst performing sectors

1. Electronic & Elect Equip -5.9
2. Alcoholic Beverages -5.4
3. Diversified Industrials -5.2
4. Banks: Retail -5.0
5. Insurance -4.9

Profit fears hit Diageo

COMPANIES REPORT

By Joel Kibazo, Peter John and Martin Brice

The prospect of profit downgrades for food and drinks giant Diageo sent the company shares tumbling. The shares surrendered 44½ or 6.6 per cent to 634½p. Turnover was 10m.

Dealers moved to unload the stock after the company was reported to have spoken of continuing weakness in some emerging markets, raising doubts about current profit estimates.

At a dinner hosted on Monday evening by UDV, Diageo's spirits arm, dealers said the company had indicated trading had been particularly difficult in Latin America recently. Analysts suggested liquor volumes in Brazil and Venezuela had fallen significantly. About 8 per cent of group profits are derived from the region.

Several analysts are expected to shave interim profit forecasts for the half to the end of December 1998 in the next few days. However, brokers such as Schroders and SG Securities were said to have reiterated "buy" recommendations.

With the shares outperforming the market, profit-taking and a sharp market retreat were also factors in the stock's decline yesterday.

Lasmo was top volume trader among Footsie and FTSE 250 stocks as brokers indulged in what one dealer referred to as the "wounded bison" approach.

Oil companies, especially the second-line exploration and production stocks, have been left highly exposed by the relentless slide in underlying oil prices, and sector specialists have been circling the herd looking for especially weak members.

Yesterday CSFB struck at Lasmo. Although the company had underperformed the FTSE All-Share by 54 per cent over the past year, CSFB snatched away its "buy" recommendation on the stock and shifted its earnings numbers.

The move came in response to Lasmo's recent announcement that it is to cut 200 head office jobs in a restructuring programme aimed at saving £30m a year. CSFB believes reducing administration costs is not the way to help underlying profitability and that the company should be looking much more closely at production costs.

Lasmo needs an oil price of $15 a barrel to break even and is assuming $13 a barrel for next year. Some analysts have expressed doubts about the company's viability if the price of crude stays at current levels. The shares fell 7½ to 132p on turnover of 17m shares.

HSBC dropped 104 to £15.36 in response to a fall of more than 4 per cent on Hong Kong's Hang Seng index, where the bank is a big constituent. The stock was also hit by cautious broker comments before a round of meetings between the bank and analysts.

Crédit Lyonnais Securities is concerned about HSBC's exposure to Asia and Brazil and has downgraded its recommendation on the stock from "buy" to "add".

It said it expected to be reducing forecasts after seeing the company next week. Crédit Lyonnais forecasts £4.36bn for the current year and is expected to reduce by about 8 per cent.

Some dealers said ABN Amro, HSBC's house broker, had also reduced its forecasts, but Peter Toeman at the broker said he had left his figures unchanged.

Yesterday, Crédit Lyonnais cut its current-year profit estimate for Standard Chartered by £45m to £775m. Standard, which is also exposed to Hong Kong, fell 17 to 627p.

Lloyds TSB fell 51½ to 791p after HSBC Securities cut its 1998 profits forecasts for the group to £2,920bn and reduced its 1999 figure by £150m to £3,650m; to take account of bad debt provisions, reduced dealing profits and a lower contribution from the developing world. However, the broker retains the stock as an "add".

Capita fails test

Capita was the worst performer in the FTSE 250, slipping almost 9 per cent or 51 to 521p following news that it had lost the contract to run the written section of the UK driving test on behalf of the Driving Standards Agency. Nasdaq-quoted Sylvan Learning Systems said that it had won the contract.

However, Capita was said to have told analysts that it had won 70 per cent more business this year than last year and the team at Crédit Lyonnais Securities told clients the contract loss had no effect on its forecasts.

The team said: "We confidently expect Capita to announce further contract wins over the coming weeks and would highlight the stock's proven ability to bounce back from weakness."

Traders suggested that with the stock standing at almost 58 times this year's forecast earnings, the shares would react violently to any bad news.

SmithKline Beecham was comparatively resilient within internationally traded drugs stocks as brokers responded to comments made at a dinner on Monday night.

The head of the company's vaccines division discussed the prospects for various products, including LymeRix, for Lyme disease. Goldman Sachs came away convinced that the target 15 per cent revenue growth was achievable.

SmithKline fell only 10 to 784p while Glaxo Wellcome was down 48 at £18.69 and Zeneca 105 at £24.15.

Education group Nord Anglia touched a new 52-week low and chairman Kevin McNeany moved in and bought 30,000 shares at 158p each. The stock closed down 3½ at 161p.

Pharmaceuticals company Cortecs was the worst performer in the entire market, dipping almost 57 per cent, or 15 to 11½p. This is the lowest point at which the shares have stood since the company floated in 1994. In 1996 they reached 394p.

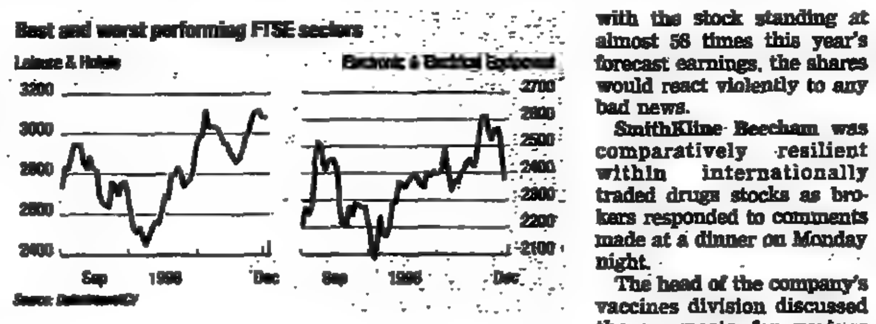
The damage was done by the company announcing that several senior management figures had quit and that delays had emerged in the approval of Macritonin, its main product.

City Site Estates was up 4 at 30½p after it said it had received a further approach, following the 28p offer from management made on November 23.

Jersey-based retailer Le Riche was down 17½ at 455p after it talked of "the most difficult market conditions this decade".

Fashion retailer Forminster opened its flagship store in Oxford Street yesterday with a profits warning. The shares fell 4 to 48½p.

Best and worst performing FTSE sectors



Source: Datastream/ICV

FT 30 INDEX

	Dec 1	Nov 30	Nov 27	Nov 26	Nov 25	Yr ago	*High	*Low
FT 30	3351.3	3449.7	3507.2	3504.8	3470.1	3395.2	[illegible]	2790.6
Ord. div. yield	3.14	3.08	3.00	3.00	3.03	3.35	[illegible]	2.72
P/E ratio net	21.35	22.00	22.35	22.35	22.13	20.73	[illegible]	15.80
P/E ratio nil	21.20	21.81	22.29	22.22	22.03	20.45	[illegible]	15.71

FT 30 hourly changes

8	9	10	11	12	13	14	15	16	High	Low
3445.7	3408.3	3368.2	3362.6	3362.1	3378.2	3370.4	3359.7	3349.7	[illegible]	3348.2

STOCK MARKET TRADING DATA

	Dec 1	Nov 30	Nov 27	Nov 26	Nov 25	Yr ago
SEAQ bargains	74,885	57,211	39,041	59,206	60,895	50,915
Equity turnover (£m)†	-	n/a	2774.9	2785.2	2931.7	2503.1
Equity bargains†	-	n/a	51,590	81,042	59,138	38,519
Shares traded (mil)†	-	n/a	781.8	728.8	774.5	769.6
Total market bargains	[illegible]	[illegible]	[illegible]	[illegible]	n/a	-
Total turnover (£m)	[illegible]	[illegible]	[illegible]	[illegible]	n/a	-
Total shrs traded (mil)	[illegible]	[illegible]	[illegible]	[illegible]	n/a	-
Tradepoint turnover (£m)	20.7	18.2	23.6	23.3	22.0	28.4
Tradepoint shrs traded (mil)	9.4	7.5	7.3	8.54	9.1	11.1

■ London market data

Rises and falls*		52 Week highs and lows		LIFFE Equity options	
Total Rises	[illegible]	Total Highs	[illegible]	Total contracts	39,975
Total Falls	1,498	Total Lows	105	Calls	16,646
Same	1,168			Puts	23,329

Dec 1 *Data based on Equity shares listed on the London Share Service.

FUTURES AND OPTIONS

■ FTSE 100 INDEX FUTURES (LIFFE) £10 per full index point

	Open	Sett price	Change	High	Low	Est. vol	Open int.
Dec	5730.0	5548.0	-262.6	5750.0	5535.0	43252	185364
Mar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Jun	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

■ FTSE 250 INDEX FUTURES (LIFFE) £10 per full index point

[illegible]

■ FTSE 100 INDEX OPTION (LIFFE) £10 per full index point

[illegible]

■ EURO STYLE FTSE 100 INDEX OPTION (LIFFE) £10 per full index point

[illegible]

LONDON RECENT ISSUES: EQUITIES

[illegible]

FTSE GOLD MINES INDEX

[illegible]

FTSE Actuaries Share Indices — The UK Series

	Dec 1	Day's chge%	Nov 30	Nov 27	Year ago	Gross yield%	…
FTSE 100	5537.5	-3.6	5743.9	5844.2	4977.8	2.91	[illegible]
FTSE 250	4821.4	-1.6	4901.7	4926.9	4669.4	3.86	[illegible]
FTSE 250 ex Inv Tr	4847.7	-1.5	4923.4	[illegible]	4703.6	3.81	[illegible]

[illegible]

■ FTSE Actuaries Industry Sectors

[illegible]

■ Hourly movements

[illegible]

TRADING VOLUME

■ Major Stocks yesterday

[illegible]

FTSE INTERNATIONAL

Highs & Lows shown on a 52 week basis

WORLD STOCK MARKETS

EUROPE

AUSTRIA (Dec 1 / Sch)

BELGIUM/LUXEMBOURG (Dec 1 / Frs.)

CZECH REP (Dec 1 / Koruna)

DENMARK (Dec 1 / Kr)

FINLAND (Dec 1 / Mks)

FRANCE (Dec 1 / Frs.)

GERMANY (Dec 1 / Dm.)

GREECE (Dec 1 / Drachma)

IRELAND (Dec 1 / Punt)

ITALY (Dec 1 / Lira)

NETHERLANDS (Dec 1 / Fls.)

NORWAY (Dec 1 / Kroner)

POLAND (Dec 1 / Zloty)

PORTUGAL (Nov 30 / Escudo)

SPAIN (Dec 1 / Pts.)

SWEDEN (Dec 1 / Kronor)

SWITZERLAND (Dec 1 / Frs.)

TURKEY (Dec 1 / Tk Lira)

PACIFIC

JAPAN (Dec 1 / Yen)

AUSTRALIA (Dec 1 / Aus$)

HONG KONG (Dec 1 / HK $)

INDONESIA (Dec 1 / Rupiah)

MALAYSIA (Dec 1 / MYR)

NEW ZEALAND (Dec 1 / NZ $)

SINGAPORE (Dec 1 / S$)

SOUTH KOREA (Dec 1 / Won)

TAIWAN (Dec 1 / TW $)

THAILAND (Dec 1 / Baht)

AMERICAS

CANADA

TORONTO (Dec 1 / Can $)
4 pm close

MONTREAL (Dec 1 / Can $)
4 pm close

MEXICO (Dec 1 / Peso)
12.30 pm

AFRICA

SOUTH AFRICA (Dec 1 / Rand)

FT/S&P ACTUARIES WORLD INDICES

The FT/S&P Actuaries World Indices are owned by FTSE International Limited, Goldman, Sachs & Co. and Standard & Poor's. The indices are compiled by FTSE International and Standard & Poor's in conjunction with the Faculty of Actuaries and the Institute of Actuaries.

NATIONAL AND REGIONAL MARKETS
Figures in parentheses show number of lines of stock

MONDAY NOVEMBER 30 1998 — FRIDAY NOVEMBER 27 1998 — DOLLAR INDEX

Australia (78)
Austria (22)
Belgium (22)
Brazil (32)
Canada (118)
Denmark (34)
Finland (28)
France (75)
Germany (55)
Greece (35)
Hong Kong, China (67)
Indonesia (28)
Ireland (16)
Italy (63)
Japan (446)
Mexico (25)
Netherlands (27)
New Zealand (18)
Norway (36)
Philippines (22)
Portugal (18)
Singapore (41)
South Africa (59)
Spain (30)
Sweden (46)
Switzerland (36)
Thailand (26)
United Kingdom (206)
USA (620)

Americas (800)
Europe (737)
Eurobloc (346)
Nordic (146)
Pacific Basin (731)
Euro-Pacific (1468)
North America (738)
Europe Ex. UK (529)
Europe Ex. Eurobloc (391)
Europe Ex. UK Ex. Eurobloc (183)
Pacific Ex. Japan (285)
World Ex. Eurobloc (1961)
World Ex. US (1687)
World Ex. UK (2099)
World Ex. Japan (1861)

The World Index (2307)

Emerging markets:

IFC Investable Indices

Latin America
Argentina
Brazil
Chile
Colombia
Mexico
Peru
Venezuela
East Asia
China
Korea
Philippines
Taiwan, China
Thailand
Indonesia
Malaysia
South Asia
India
Pakistan
Sri Lanka
Europe
Czech Rep
Greece
Hungary
Poland
Portugal
Russia
Slovakia
Turkey
Mideast/Africa
Egypt
Israel
Jordan
Morocco
South Africa
Zimbabwe
Composite
Latin America
Asia
EMEA
Europe
Euro Europe
ME & Africa
Comp + Malay
Asia + Malay

4 pm close December 1

NEW YORK STOCK EXCHANGE PRICES

- X - Y - Z -

1998 High	Low	Stock	Div	Yld %	P/E	Vol 100s	High	Low	Close Price	Ch'ge Prev
118½	66⅞	Xerox	1.44	1.3		9908	111¾	106⅞	110⅛	+3⅛
66⅛	37½	Xtra Corp			12	535	47⅝	47⅛	47⅜	
31⅛	22½	Yankee Egy	1.38	4.7	23	52	29⅝	29¼	29⅝	+¼
32⅛	27½	York Int	0.48	1.2	23	703	42	41⅝	41⅞	-⅛
24⅞	6⅛	Zapata			2	2118	8⅛	7⅞	8⅛	+⅛
30½	23	Zenith Nat	1.00	4.1	17	85	24⅛	24	24⅛	-⅛
8⅛	5⅞	Zemex Inc	0.70	10.3		108	6⅝	6⅝	6⅝	-⅛
14⅝	8⅞	ZweigFdA	1.09	9.7		370	11⅛	11⅛	11⅛	-⅛
9⅞	8⅛	Zweig Tot	0.84	9.4		480	9⅛	8⅞	8⅞	

Price data supplied by Exel, part of FT Information.

Yearly highs and lows for NYSE reflect the period from Jan 1, 1998. Unless otherwise noted, rates of dividends are annual disbursements based on the latest declaration. Volume figures are unofficial.

d-new yearly low, P/E price-earnings ratio, vol- volume, u-new yearly high, x-ex-dividend or ex-rights, yld-yield, z-sales in full.
Dealings suspended.

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GLOBAL EQUITY MARKETS

US INDICES

Dow Jones	Nov 30	Nov 27	Nov 26	1998 High	1998 Low	Since compilation High	Since compilation Low
Industrials	9116.55	9333.08	(c)	9374.27 (23/11)	7539.07 (31/8)	9374.27 (23/11/98)	41.22 (8/7/32)
Home Bonds	107.00	106.75	(c)	107.82 (5/10)	104.42 (11/5)	107.82 (5/10/98)	54.99 (1/10/81)
Transport	3091.23	3077.81	(c)	3686.02 (16/4)	2345.00 (8/10)	3686.02 (16/4/98)	13.23 (8/7/32)
Utilities	303.52	309.93	(c)	320.51 (8/10)	262.66 (8/1)	320.51 (8/10/98)	10.50 (8/7/32)

DJ Ind. Day's high 9348.53 (9403.82) Low 9074.07 (9283.82) (Theoretical). Day's high 9333.08 (9345.21) Low 9116.55 (9304.58) (Actual).

Standard and Poors	Nov 30	Nov 27	Nov 26	1998 High	1998 Low	Since compilation High	Since compilation Low
Composite‡	1163.63	1192.29	(c)	1192.29 (27/11)	927.69 (9/1)	1192.29 (27/11/98)	4.40 (1/6/32)
Industrials‡	1388.06	1421.33	(c)	1421.33 (27/11)	1077.40 (9/1)	1421.33 (27/11/98)	3.52 (30/6/32)
Financial‡	127.77	131.84	(c)	147.80 (14/7)	95.80 (8/10)	147.80 (14/7/98)	7.13 (4/9/74)
Others: NYSE Comp.	571.50	583.00	(c)	600.75 (17/7)	477.20 (8/10)	600.75 (17/7/98)	4.64 (25/4/42)
Amex Comp	663.58	673.92	(c)	753.87 (22/4)	563.75 (8/10)	753.87 (22/4/98)	534.20 (16/7/98)
NASDAQ Comp	1949.54	2016.44	(c)	2016.44 (27/11)	1419.12 (8/10)	2016.44 (27/11/98)	54.87 (3/10/74)
Russell 2000	397.75	402.09	(c)	491.41 (21/4)	310.28 (8/10)	491.41 (21/4/98)	123.36 (7/12/93)

RATIOS

	Nov 27	Nov 20	Nov 13	Year ago
Dow Jones Ind. Div. Yield	[illegible]	1.86	[illegible]	1.74
	Nov 18	Nov 11	Nov 4	Year ago
S & P Ind. Div. yield	1.25	1.29	1.30	1.50
S & P Ind. P/E ratio	33.53	32.98	32.70	26.38

US DATA

MARKET ACTIVITY

Volume (million)	Nov 30	Nov 27	Nov 25
NYSE	689.200	259.970	583.580
Amex	27.575	13.252	18.936
NASDAQ	1114.61	516.201	821.853

NYSE	Nov 30	Nov 27	Nov 25
Issues Traded	3,540	3,282	3,508
Rises	1,075	1,474	1,563
Falls	2,049	1,193	1,415
Unchanged	422	595	530
New Highs	74	63	76
New Lows	43	14	25

NYSE TRADING ACTIVITY — Volume: 689,200,000

ACTIVE STOCKS

Monday	Stocks traded	Close price	Day's change
Cendnt	17,385,100	19	+1⅛
AscOnLan	14,534,100	87⅞	-7⅝
Compaq	11,034,800	32⅝	-1⅛
Mobil	8,727,900	85⅞	+⅞
Citigrp	8,025,400	50⅞	-2⅞
Cnoco	7,998,100	23⅞	-1⅛
Sclmb	6,986,700	44⅞	-3⅞
Exxon	6,578,100	75⅞	+⅞
Amoco	6,478,400	58⅞	-1⅛
Hallib	5,883,100	29⅝	-7⅛

BIGGEST MOVERS

Monday	Close price	Day's change	Day's chge %
Ups			
Fngrhut	13⅞	+1⅞	+14.3
CKE	24⅞	+3	+14.0
DVI	17⅞	+2⅛	+13.2
LedEnd	22⅞	+1⅞	+9.4
Downs			
Smithln	24⅞	-2⅞	-10.6
DuPoPh	11⅞	-1⅛	-9.6
KentelS In	42⅞	-4⅛	-9.1
CoralLabs	18⅞	-1⅞	-9.0

NASDAQ TRADING ACTIVITY — Volume: 1,114,610,000

JAPAN

	Dec 1	Nov 30	Nov 27	1998 High	1998 Low	Since compilation High	Since compilation Low
Nikkei 225	14835.41	14883.70	15089.39	17264.34	12879.97	38915.8	85.25

Day's high: 14931.36. Day's low: 14763.88.

TOKYO TRADING ACTIVITY

ACTIVE STOCKS

Tuesday	Stocks traded	Close price	Day's change
Sumitml	7,955,000	145	-2
Sekisui	6,725,000	319	+5
MitEnS	6,710,000	130	[illegible]
NpStl	6,240,000	225	+1
MitTrB	6,175,000	165	-10
STokM	5,984,000	1333	-7
AoidCp	5,768,000	69	-5
Hitachi	5,285,000	730	-11
Toshiba	5,120,000	690	[illegible]
Mitsby	4,852,000	470	+9

BIGGEST MOVERS

Tuesday	Close price	Day's change	Day's chge %
Ups			
Toyoita	154	+15	+10.8
ToshCp	2175	+125	+6.1
Downs			
Ranoko	59	-8	-11.9
ShokR	64	-6	[illegible]
Tbshoa	80	-7	-8.0
YamKog	640	-55	-7.9
SetoKg	98	-8	-7.5
NpYkin	78	-6	-7.1

FRANCE

	Dec 1	Nov 30	Nov 27	1998 High	1998 Low	Since compilation High	Since compilation Low
CAC 40	3688.34	3843.38	3950.94	4388.48	2862.54	4388.48	984.61

PARIS TRADING ACTIVITY — Volume: 735,770,000

ACTIVE STOCKS

Tuesday	Stocks traded	Close price	Day's change
TotalB	5 143 207	613	-87
FrTele	[illegible]	385	-10
[illegible]	2 793,003	263.4	[illegible]
Alcatel	1 893,656	740	-12
Axa	1,094,350	710	-25
BNP	1,092,507	414.2	-20.8
Eldqu	1,017,739	673	[illegible]
Rhodi	942,774	249	-15
Paribas	771,534	430	-27
Usinor	757,965	62	-2

BIGGEST MOVERS

Tuesday	Close price	Day's change	Day's chge %
Ups			
Bygues	1163	+103	+9.7
Synthl	1230	[illegible]	+3.4
SAT	2277	[illegible]	+3.4
Downs			
TotalB	618	-87	-12.3
STMicro	359	[illegible]	-9.9
Lgardr	210	-21.5	-9.3
GrpGTM	588	-54	-8.4
G phys	360	-29	-7.5

GERMANY

	Dec 1	Nov 30	Nov 27	1998 High	1998 Low	Since compilation High	Since compilation Low
DAX	4781.73	5022.70	5121.48	6171.43	3896.08	6171.43	931.18

Day's high: 4998.85. Day's low: 4781.12

FRANKFURT TRADING ACTIVITY — Volume: (a)

ACTIVE STOCKS

Tuesday	Stocks traded	Close price	Day's change
Dt Bk	723,116	100.1	-4.6
DaimCh	697,451	152.5	-8.8
Cmmzbk	508,580	52.5	-3.3
BASF	481,387	61	-3.2
Siemens	435,539	114.8	-3.2
DresBk	433,288	71	-6
Lufthns	432,724	36	-1.1
Bayer	429,406	67.9	-1.7
H'chst	315,077	68.4	-4.4
RWE	278,831	88.8	-2.95

BIGGEST MOVERS

Tuesday	Close price	Day's change	Day's chge %
Ups			
Sixtag	112	+4	+3.7
MchRKO	550	+15	+2.8
Downs			
Drgwrk	24.8	-2.4	-8.8
BMW	1200	-110	-8.4
BMWPf	720	-65	-8.3
HeidelPf	133	-10.5	-7.3
Porsche	3500	-270	-7.2
Linde	885	-67	-7.0

UK

	Dec 1	Nov 30	Nov 27	1998 High	1998 Low	Since compilation High	Since compilation Low
FTSE 100	5537.5	5743.9	5844.2	6179.00	4648.70	6179	986.9

Day's high 5743.9. Day's low 5519.1

LONDON TRADING ACTIVITY

ACTIVE STOCKS

Tuesday	Stocks traded	Close price	Day's change
LASMO	37,444,870	132	-7½
Br Petroleum	28,415,360	910	-34½
Assoc (BSR)	28 059 050	64½	
Siebe	20,733 780	210	[illegible]
Shell	20,504 940	353½	-12
Br Biotech	18,510,260	37	-2
Diageo	17,510,940	709½	+7½
Barclays	15,543,200	1323	-47
BPB	13 538,950	202½	-5½
Lloyds TSB	13 524,970	791	-51½

BIGGEST MOVERS

Tuesday	Close price	Day's change	Day's chge %
Ups			
City Site	30½	+4	+15.1
Dixon Motors	108½	+12	+12.4
Wagon	204	+20½	+11.2
Downs			
Cortecs	11½	-16	-58.8
[illegible]	17½	-10	-36.4
Turnpyke	5	-2½	-33.3
Kenwood Appl	104	-19½	-15.8
Core	40	-7½	-15.8

INDEX FUTURES

S&P 500	Open	Latest	Change	High	Low
Dec	1162.40	1156.70	-5.80	1162.70	1159.20
Mar	-	1174.10	-	-	-

Nikkei 225	Open	Sett price	Change	High	Low
Dec	14820.0	14890.0	-50.0	14940.0	14780.0
Mar	14790.0	14830.0	-60.0	14860.0	14730.0

Open interest figures for previous day.

WORLD MARKETS AT A GLANCE

[illegible]

THE NASDAQ-AMEX MARKET GROUP

4 pm close December 1

[illegible]

AMEX

4 pm close December 1

[illegible]

EASDAQ

[illegible]

STOCK MARKETS

Season of goodwill heralds early headache

WORLD OVERVIEW

December did not usher in a season of goodwill for equity investors, as a ripple effect carried share prices lower round the world, *writes Philip Coggan.*

The Dow Jones Industrial Average followed Monday's 216-point drop with another three-digit loss in early trading, which took the benchmark briefly back below the 9,000 level.

Asian markets sold off in response to Wall Street's overnight weakness, with the Hang Seng index in Hong Kong dropping below 10,000. The Singapore and Manila markets were also sharply lower.

Europe had that bad international background to contend with but it also faced some poor economic news in the face of five purchasing managers' surveys – in the UK, Germany, Italy, Denmark and Sweden – which showed that manufacturing activity was declining. The same conclusion could be drawn from the US purchasing managers' report.

In the face of that pessimism, the latest merger news, in the form of confirmation of the Exxon-Mobil deal, Total's bid for Petrofina and talk of a Sanofi/Synthelabo link-up, failed to bring the required cheer.

The profit-taking that had been noticeable on Monday continued. "Maybe we've had one or two deals too far and investors have realised that not all are all they're cracked up to be," said David Bowers, European equity strategist at Merrill Lynch.

Analysts are generally agreed that the rally that began in early October had carried share prices too far. But they differ on how far bourses need to correct.

The disagreements may be greatest in the emerging markets, where some of the world's strongest rallies have come in spite of highly shaky fundamentals.

"We do expect a sizeable pullback in the emerging markets [10-15 per cent] based on a refocus on the problems of the global economy," says Geoffrey Dennis, global emerging markets equity strategist at Deutsche Bank Securities. "However, the lows of September 11 should not be breached."

Figures from FTSE International show that Asian bourses led the world stock markets once again in November, with Indonesia and Thailand the two best performers in dollar terms over the month, just as they were in October.

The worst performing markets of the month were a more mixed bunch. The weakness of the oil price marked *out* Norway, which fell 7.4 per cent, while Mexico, which had to raise short-term interest rates during the month, dropped 6.4 per cent.

Wall Street turns back to high-techs

AMERICAS

Wall Street shrugged off a weak opening, as investors returned to high-tech shares and other sectors after Monday's sell-off, while blue chips continued lower, *writes John Labate in New York.*

Early in the day, the largest merger ever was announced, as Exxon and Mobil confirmed they had reached a takeover agreement. Exxon, a Dow stock, fell 4.5 per cent to $71⅞ while Mobil lost $⅛ to $85¾.

Other oil stocks moved lower, with Dow member Chevron off $1⅛ to $82⅞. Oil service stocks were also sold, with Schlumberger down $1¾ to $42⅞.

The Dow Jones Industrial Average was off more than 100 points in the first hour of trading before the rebound in sentiment took hold by midday. By early afternoon the Dow was down 19.05 to 9,097.50. But the broader Standard & Poor's 500 index was 2.89 higher at 1,166.52.

Firmer computer-related shares helped send the Nasdaq composite 18.05 higher to 1,967.59. Microsoft gained $3⅜ to $125⅜ while Sun Microsystems surged more than 5 per cent to $77¾. Semiconductor shares also pushed higher, with Micron Technologies up $1⅛ to $42½. Apple Computer surged more than 8 per cent higher to $34½.

But many small-company shares continued lower, with the Russell 2000 index down 1.67 to 396.08.

As stocks recovered, Treasury bonds moved off morning highs. By midday the benchmark long bond was $\frac{1}{32}$ higher to 102⅝, yielding 5.066 per cent.

Banking shares continued to weaken, with Case Manhattan down $1⅝ to $62⅛.

Nine West, the specialty retailer, rose 3.5 per cent to $12⅞ after announcing a restructuring plan that would close about 70 stores. Starbucks gained $3⅝ or more than 7 per cent to $49⅝ after the coffee chain released its November same-store sales.

Internet stocks were also on the mend. Investors returned to Amazon.com, sending the online book retailer up $8¾ to $200⅝ despite a downgrading by analysts at Everan Securities. Books-A-Million, the book retailer that rallied last week when it upgraded its website, fell $1¼ to $28¾.

TORONTO ignored the early weakness on Wall Street and pushed higher on the back of a strong run in the foreign exchanges for the Canadian dollar.

There was good demand for the heavyweight sectors from the opening bell which left both banks and golds sitting on solid gains at noon. The 300 index rose 45.63 to 6,289.50.

Royal Bank of Canada put on C$1.05 at C$76.55 and Toronto Dominion added C$1.15 at C$52.50. Among golds, Placer Dome rose 90 cents to C$23.15 and Barrick 65 cents to C$31.15.

Among industrials, Northern Telecom improved C$1.05 to C$70.65.

MEXICO CITY reversed early losses to rack up a gain of 8.41 to 3,778.29 on the IPC index at midsession.

Brokers said that most of the improvement followed on from Wall Street's mid-morning fightback.

Telmex, off 10 centavos at the start of the session, gained 35 centavos to 23.40 pesos.

SAO PAULO, hit by severe profit-taking on Monday, continued to slide lower. Brokers said sentiment had been hit by heavy dollar outflows in November.

At midsession, the Bovespa index was off 247 or 2.9 per cent at 8,384.

Total bid sends Paris lower

EUROPE

A severe shakeout for oil giant Total plus a further round of widespread profit-taking sent PARIS steeply lower and left the CAC-40 index off 155.0 at 3,688.34 for a two-session setback of 6.5 per cent.

Total crashed 12.3 per cent in heavy volume after the group confirmed that it was taking a 41 per cent stake in Petrofina and planned to put in a bid for the rest of the Belgian oil leader.

With analysts arguing that Total was effectively paying too high a price, and amid concern the deal would not be earnings positive until 2001, the shares ended off FFr87 at FFr618 in turnover of FFr3.1bn.

In Brussels, though, Petrofina showed a dazzling turn of speed in an otherwise severely depleted market. It surged BFr2,625 or 18.4 per cent to BFr16,875 in solid volumes.

STMicroelectronics tumbled FFr39 or 9.3 per cent to FFr359. Alcatel lost FFr12 at FFr740 in heavy turnover of FFr1.4bn in spite of a positive mood at Salomon Smith Barney, which raised its target price by FFr10 to FFr850.

Rhône-Poulenc fell FFr20.10 or 7.1 per cent to FFr263.4 as investors showed their disappointment at the news that the group's merger with Hoechst of Germany will not take place in full for two or three years.

Construction group Bouygues, which fell steeply on Monday on news of a big stake changing hands, rebounded FFr103 to FFr1,163 as takeover hopes resurfaced.

FRANKFURT crumpled 5 per cent lower, hit by profit-taking, dollar weakness and *Wall Street's early tumble.* The Xetra Dax index fell 248.96 to 4,777.18.

Hoechst dropped DM4.25 to DM68.25 in spite of the group's claim that its planned life-sciences merger with France's Rhône-Poulenc could have synergies of $1.2bn a year within three years. Schering, which wants to take a stake in the merged company, to be caled Aventis, gave up DM8.85 to DM205.95.

Elsewhere among the chemicals groups, Degussa was DM3.60 lower at DM81, in spite of reporting record earnings for the fourth consecutive year.

Car stocks were hurt by dollar weakness. BMW tumbled DM94 to DM1,205, also hit by profit-taking and a report about discord among top management about the future of its troubled UK subsidiary, Rover Group. DaimlerChrysler lost DM5.90 to DM152.65 and Volkswagen was DM10.10 lower at DM128.50.

Banks did not escape the pressure. The hard-hit HypoVereinsbank lost DM12.80 to DM135.20.

Among the smaller stocks, recycling groups Sero Entsorgung and Loesch Umweltschutz plunged on news that senior executives had been taken into custody as part of an investigation into possible tax and securities violations. Sero finished DM10 lower at DM31.50 and Loesch lost DM8.85 to DM26.95.

AMSTERDAM fell steeply in heavy volume with the AEX index ending off 51.88 at 1,048.73.

Financials did most of the damage, running into heavy profit-taking. ABN-Amro fell Fl 2.90 or 7.4 per cent to Fl 36.50 in 15.6m shares traded. Aegon shed Fl 12.10 at Fl 192.50 and ING came off Fl 7.60 at FL 101.90.

Akzo Nobel clawed back from a session low of Fl 75 to close a modest 10 cents easier at Fl 78.30 after an upgrade to outperform by Deutsche Morgan Grenfell, which set a target price of Fl 92.

Trading group Hagemeyer, which faced a round of broker downgrades on Monday, continued to slide precipitously, tumbling a further Fl 6.20 to Fl 60.90 for a two-day decline of more than 14 per cent.

KLM, a weak market on Monday, was a rare firm feature rebounding 80 cents to Fl 53.10, although volumes in the stock were minimal.

MILAN shares dropped sharply across the board late in the session, mirroring the decline on other European bourses and Wall Street.

The Mibtel index closed 871 or 3.9 per cent lower at 21,508 after touching 21,376 at one stage.

Parmalat, the food group, fell victim to profit takers for the second day running. *It lost L193 or 6.1 per cent to* close at L2,989, compared with its Friday closing price of L3,374.

MADRID declined for the second successive day as bank stocks suffered again.

The general index shed 24.48 or 2.9 per cent to finish at 820.48, adding to a 2 per cent fall on Monday. The market had previously risen seven days in a row, putting on a total of 68.76 or 8.7 per cent.

Profit takers moved in on the banks, which had underpinned the exchange's progress last week.

Santander fell Pta175 or 5.9 per cent to Pta2,775 on top of a 2.8 per cent fall on Monday. BBV, which lost 3.6 per cent on Monday, fell another Pta130 or 5.7 per cent yesterday to close at Pta2,150.

STOCKHOLM *also suffered* a fall induced by the profit takers. The general index closed 2.7 per cent down at 3,193.16.

Ericsson, the telecommunications group, which had nearly doubled in value in less than two months, dropped SKr5.50 to SKr220.50.

ZURICH pulled back as recently favoured banks took the brunt of the selling and the SMI index finished 294.5 lower at 6,764.3.

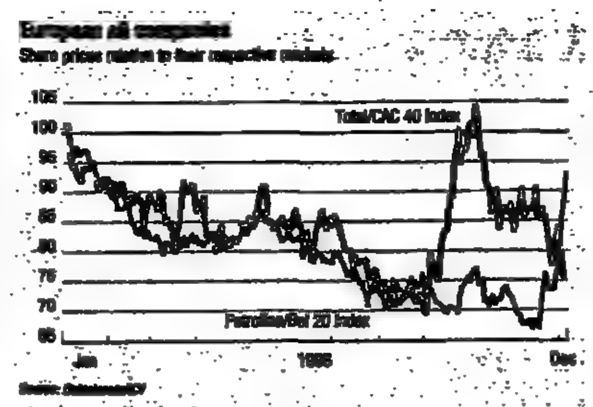
UBS fell SFr26 to SFr394 and CS Group gave up SFr14 to SFr226. Among the insurers, Zurich Allied slumped SFr70 to SFr927, Swiss Life lost SFr76 to SFr900 and Baloise was SFr100 lower at SFr1,200.

The FTSE Eurotop 300 index fell 43.63 or 3.79 per cent to 1,108.30. See Euro Prices page.

Written and edited by Michael Morgan, Jeffrey Brown, Michael Peel and Paul Gregan

European oil companies

Share prices relative to their respective markets



THE DAY'S CHANGES	% Change
Frankfurt	-5.0
Amsterdam	-4.7
Zurich	-4.2
France	-4.0
Milan	-3.9
Madrid	-2.9
Stockholm	-2.7
Helsinki	-2.2

EMERGING MARKET FOCUS

KL ills are only in remission

Malaysia's retail investors are giddy with delight about a Kuala Lumpur stock market that has almost doubled in value in the space of three months.

It does not matter to them that the rally has been orchestrated by the authorities in an attempt to enrich a corporate sector hit hard by the regional financial crisis.

Analysts say many investors are on too good a high to notice some of the best performers could be bust. "It's a market *flourishing in* an oxygen tent," said Dominic Armstrong, head of research at Jardine Fleming.

The composite index has surged from a low of 262.70 on September 1 to 518.75 at yesterday's close. The advance came after the authorities trapped billions of dollars in the country by imposing capital controls and barring foreign investors from repatriating profits from the sale of shares for a year.

By subsequently lowering interest rates, the government made the stock exchange the best place for the constrained investors to put their cash. But the money to be made in the short term does not reflect strong economic or corporate fundamentals.

"People are not buying because these are good stocks," said Kostas Panagiotou, senior economist at Kim Eng Securities. "They are just throwing money at the market."

Lai Tak Heong, research director at SG Research, said retail investors were entranced by the fact that they could afford M$1.50 stocks that cost M$150 before the economic turmoil began last year. They did not realise the shares were now only worth 10 sen, if that.

Already big names, such as Proton, the national car maker, are scouting for potential buyers. And Abdul Rashid Hussain, the country's dominant financier, announced on Monday that he would have to sell control of his operations to the government as a result of the financial crisis.

"The swiftness and severity of the decline in the Malaysian market has not been seen since the last global depression," Mr Rashid said. "Malaysia has suffered a loss of as much as M$600bn [$109bn] on market capitalisation."

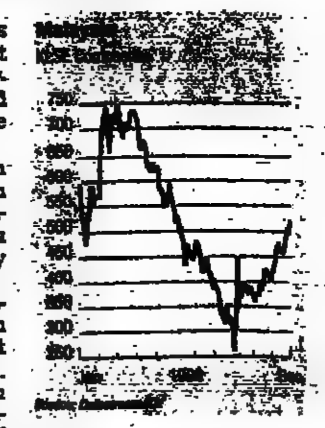
Domestic investment may push the market to between 600 and 700 points, analysts say, but to go much beyond that will take outside funds. And most foreign investors will not consider committing themselves further to Malaysia until the capital controls are lifted.

Overseas investors are expected to withdraw en masse when the one-year restriction on repatriating profits from the sale of shares ends next September. They are angry that Malaysia temporarily trapped them and will want nothing more to do with the country.

Mr Lai of SG Research says their minds can be changed only if the government uses the capital controls to put the economy back on track.

"Come September, if they don't like what they see, we will see money flowing out," Mr Lai said.

Sheila McNulty



Sanlam slips with all share

SOUTH AFRICA

Shares in Johannesburg continued to lose ground and at the close the all share index was off 233.2 or 4.2 per cent at 5,387.7 to extend its decline to 318 points in three sessions.

Financials fell 5.2 per cent to 8,296.8. The insurance sector newcomer Sanlam, which floated at R6, fell 32 cents to R5.67 on its second day of trading.

Industrials lost 4 per cent to 6,038.8 and golds shed 6.3 per cent to 977.3.

HSBC leads Hong Kong slide

ASIA PACIFIC

Shares in HONG KONG tumbled 4.1 per cent, tripped up by Wall Street's overnight losses and concern that weak local fundamentals had failed to justify recent market gains.

The Hang Seng index fell 426.47 to close at the day's low of 9,975.85, taking its loss over two days to 7.3 per cent. Analysts noted that it was the first time since November 13 that the index had dipped below the 10,000 point level.

HSBC dragged the market down with a fall of HK$9 to HK$189.50. The property sector was also hard hit, losing 5.5 per cent. Cheung Kong fell HK$4.25 to HK$51.50 and *Sung Hung Kai Properties* lost HK$52.75.

China-linked shares remained under pressure. Red chips fell 3.6 per cent while H shares slid 5.8 per cent.

TOKYO proved remarkably resilient in the face of the sell-off on Wall Street and another big bankruptcy in the construction sector, *writes Paul Abrahams.*

The Nikkei 225 Average fell for the third day running, down by a bare 0.32 per cent or 48.29 at 14,835.41, after trading between 14,931.16 and 14,763.88. The sell-off was broad-based with the more representative Nikkei 300 down 0.2 at 227.8, while the Topix index of all first-section shares eased just 1.24 to 1,142.26 Trading remained light at 393m.

JDC, the medium-sized construction group, which had been the second most heavily traded stock on Monday, was suspended yesterday after the company announced it was seeking protection from creditors.

The construction sector overall remained solid, down only 1.2 per cent, but weaker companies slumped. Daisue Construction suffered the biggest fall on the day, down 14 per cent or Y13 to Y77. Haseko dropped 12 per cent, or Y8 to Y59, in very heavy volumes.

The main lenders and banking shareholders of JDC also suffered. Mitsui Trust fell Y10 to Y155 in heavy trading. Asahi Bank dropped Y11 to Y459.

Nippon Credit Bank, which confirmed it was considering merger *negotiations* with Chuo Trust, was unchanged at Y174, but Chuo fell Y5 to Y535.

One of the few sectors to rise was telecommunications. NTT DoCoMo, recently recommended as a buy by Goldman Sachs, continued to climb, reaching another all-time high, up Y150,000 at Y4,850,000. NTT, which has started roadshows for its fourth share issue and still owns 67.1 per cent of DoCoMo, rose Y11,000 to Y931,000.

In Osaka, the OSE index closed down 60 points at 15,419.

MANILA joined in the regional downturn and the composite index finished 53.57 *or* 2.7 per cent *lower* at 1,921.79.

San Miguel B shares led the retreat, falling 4 pesos or 5.8 per cent to 65 pesos following a local newspaper report that businessman Lucio Tan was reviving his bid to wrest control of the company from its chairman *Eduardo Cojuangco.*

SYDNEY fell 1.4 per cent with the All Ordinaries index off 39.2 at 2,734.1. Wall Street's heavy overnight fall and negative economic news – Australia's third-quarter balance of payments deficit came in higher than expected – combined with further profit-taking among banks to severely *deplete* sentiment.

BHP fell 37 cents to A$12.38. In banks, Westpac, which went ex dividend, lost 24 cents to A$10.16 as sector consolidation hopes faded. ANZ gave up 24 cents at A$10.27 for a two-day decline of 7.5 per cent.

WELLINGTON ran into selling late in the session to close off 41.33 or 2.1 per cent at 1,950.01 on the 40 capital index.

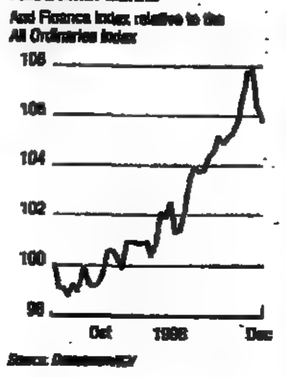
NZ Telecom shed 13 cents to NZ$7.92 and Carter Holt Harvey fell 10 cents to NZ$1.71.

SINGAPORE, up 8.5 per cent in three days, tumbled 47.85 or 3.4 per cent to 1,333.70 on the Straits Times index on profit-taking.

Property led the fallers. CityDev fell 60 cents to S$7.25 and DBS Land 12 cents to S$2.23. Creative Technology came off S$2 to S$28.30.

Australian Banks

Aust Finance index relative to the All Ordinaries index



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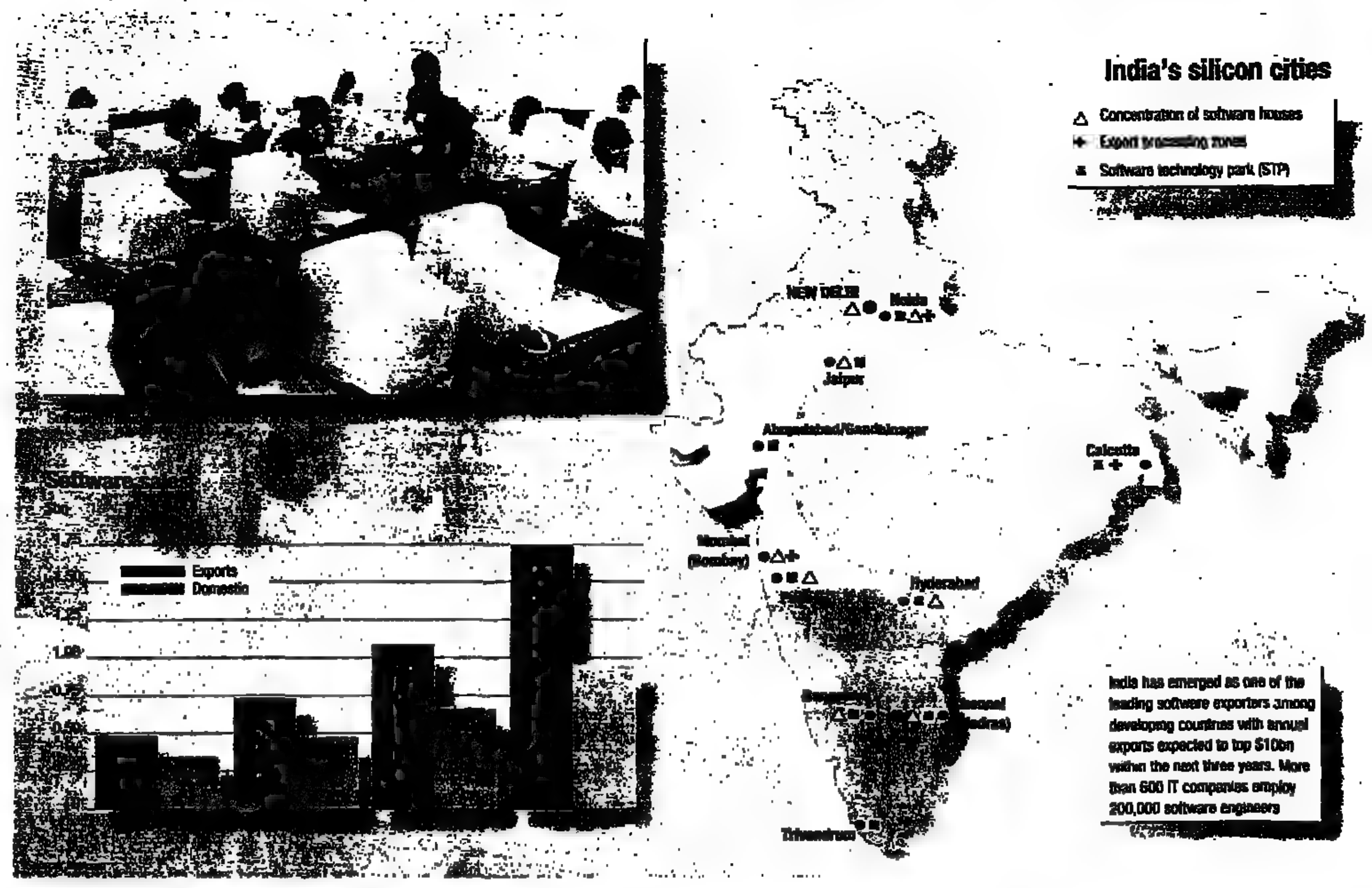
INDIA: INFORMATION TECHNOLOGY

WEDNESDAY DECEMBER 2 1998

Supplement to the FT-IT Review

New IT mantra attracts a host of devotees

The country has become one of the world's main centres for offshore software development work, reports **Paul Taylor**



India has emerged as one of the leading software exporters among developing countries with annual exports expected to top $10bn within the next three years. More than 600 IT companies employ 200,000 software engineers

India has a new mantra – Information Technology – and almost everyone is chanting it.

The success of India's export-led software development industry has helped to put IT at the top of the political agenda and turned it into a model for the modernisation of an otherwise troubled economy.

"Everyone is talking about IT," says Sudheendra Kulkarni, a member of the prime minister's office and one of the driving forces behind the recently published *report from the* National Task Force on Information Technology and Software Development which envisages building Indian software exports into a business worth at least $50bn a year by 2008.

While India's BJP-led coalition government has made fostering software development and the domestic IT industry one of its top priorities, state politicians have woken up to the potential economic and other benefits of attracting new IT investment.

Almost every Indian state has adopted its own IT development policy, including steps to encourage the use of computers in government.

Meanwhile, investors and senior industrialists have watched as the profits and share prices of India's leading domestic IT groups have soared, turning a new generation of entrepreneurs into millionaires and fuelling the aspirations of many young Indians to become the next Bill Gates, Larry Ellison or Charles Wang.

Today, in cities such as Bangalore, Bombay, Delhi and Madras, as well as emerging centres such as Pune and Hyderabad, leading Indian software companies battle with their US and European IT rivals to hire the brightest and best engineers each year from the India's premier universities and technology institutes.

When Bangalore, India's unofficial high technology capital, hosted a recent five-day IT.Com 98 exhibition, opened by prime minister Atal Behari Vajpayee at the newly completed International Technology Park, more than 70,000 people turned up every day, including thousands of students.

So many students came to the show in India's southern state of Karnataka, many of them travelling hundreds of miles overnight, that the organisers complained that potential investors could not get in.

At the end of the show one official told the local paper: "Whether we have succeeded in attracting investors to Karnataka or not, we have definitely succeeded in creating potential IT professionals from the state."

Ultimately, that may prove just as valuable because India will need a an expanding supply of IT professionals if its software development industry is to continue to grow at the present 50-55 per cent annual rate.

The Indian industry, although still small by international standards, has been growing rapidly since the mid-1980s, fuelled by domestic deregulation, entrepreneurial flair and the soaring global demand for low-cost, high-quality software and services which have turned India into one of the world's main centres for offshore software development work.

Today, Indian software companies sell their services to an expanding international customer list which includes Japanese, South Korean and south-east Asian clients as well as those from North America and Europe on the basis of quality, speed and reliability, innovation and skills as well as price.

Many other IT companies from the US and Europe, including Texas Instruments, Motorola and Oracle from the US, have established captive research and development centres in India.

Recent additions to the roster of foreign investors include Germany's SAP, Alcatel of France and Japan's Sony while Microsoft and Baan, the Nether*lands-based enterprise* resource planning software group, have both set up new operations in Hyderabad, India's fastest growing IT centre.

According to annual figures prepared by the National Association of Software & Services Companies (Nasscom) in Delhi, India's software exports jumped from $1.1bn to $1.75bn in the year to March 31, pushing the overall value of India's IT sector including domestic software and hardware sales to more than $5bn.

Predictions

Dewang Mehta, Nasscom's executive director, expects export revenues to be worth $2.7bn in the current year and to reach $4bn by the end *of the decade and he* considers the government's target of $50bn in annual exports with 10 years to be "conservative".

Just six years ago, industry shipments totalled less than $400m. That this should have been achieved in a developing country still struggling with a wide range of infrastructure problems and other obstacles is a remarkable achievement and testament to the determination of the architects of India's software industry.

They include the founders of a clear top tier of Indian software companies that is beginning to emerge as the industry begins to mature. Most of them are among the top 20 exporters, including companies such as Tata Consultancy Services, Wipro *Infotech, NIIT, Sonata* and Infosys Technologies, which account for about 60 per cent of total exports.

India's success and its ability to outshine rival offshore software development centres including China, the Philippines and eastern Europe, at least for the time being, reflects a number of factors, including the growing shortage of software engineers in the west.

As a result hundreds of companies from a wide range of industries including the IT, financial services and transport sectors, have turned to India's computer software and services companies for the IT skills they need to maintain and enhance their competitiveness.

This skills shortage has *been exacerbated by the year* 2000 computer date problem and the imminent launch of the euro in Europe, both requiring massive conversion programmes in order to make existing IT systems and software compliant.

India's geographic position has given the sub-continent a time zone advantage over both Europe and the US, enabling local companies to exploit the rapidly expanding international market for outsourced software services including remote maintenance.

Indian software engineers can fix bugs or upgrade systems overnight while their users in Western companies sleep. However, in an industry in which the main asset is people, it is India's

Turn to back page of this report

Financial Times Review of Information Technology

SPECIAL REPORT

DOMESTIC IT MARKET by Paul Taylor

Government keen to push the high-tech message

Demand from households and small businesses has picked up sharply, helping to offset an IT spending slowdown by the public sector and big corporations

When Bill Gates, Microsoft's chairman, visited India last year, it is said he was shocked by the state of the nation's infrastructure. Indeed, for all its success in software design and development, India remains relatively impoverished in terms of its own infrastructure and IT deployment.

Outside the air-conditioned offices of most big software developers – many of which would not look out of place in Silicon Valley – India is a still a baffling mixture of the old and the new.

Cable television satellite dishes and GSM mobile phones transport the products of the information age while people, oxen and auto-rickshaws carry those of the material world.

With just 1.5 telephones per 100 people, India has one of the lowest fixed telephony penetration rates in Asia. Only one out of every 700 households has a PC and in a nation of over 1bn people, the PC penetration rate is less than two per 1,000 people.

Outside the main metropolitan areas, India's banking system is still largely paper-based, few branches are networked and there are just a few hundred automated teller machines in the whole country. "The state banks have lagged behind the private sector and foreign banks," says Kishore Kapoor, marketing director of CITL, a leading Indian banking software group. Similarly, most segments of India's antiquated public sector have yet to embrace technology despite the dire need for reform.

The slow pace of technological advance has already forced some over optimistic multinationals to re-evaluate their direct investment strategies and scale back their expectations. Nevertheless, despite the recent economic slowdown, there are indications that the climate for the domestic IT industry may be improving.

Last year, despite a slowdown in government and big corporate IT investment spending by households and smaller businesses filled the gap. According to the Delhi-based Dataquest magazine, domestic IT spending grew by 26 per cent to Rs106bn with the strongest growth in the software segment, which expanded its share of the total from just over 19 per cent to nearly 32 per cent.

Declining PC prices – they fell by 17.5 per cent last year to an average of Rs40,000 – have taken their toll on some domestic suppliers, but have spurred growing sales for HCL Infosystems, the market leader, and its main rivals, Compaq, Computer and Wipro. "We have grown the PC business strongly over the past three years," says Ajai Chowdhry, chief executive of HCL, the Delhi-based IT group.

HCL Insys, HCL's hardware business, now has about 20 per cent of the overall PC market and over a third of the fast-growing home PC market into which the group has just launched a Rs29,000 machine challenging "grey" market manufacturers for the first time. Last year, about 850,000 PCs were sold in India, a figure that Mr Chowdray expects to rise to about 1m this year.

Sales of domestically produced CD-Rom titles and multimedia training programmes are also growing strongly and are now sold alongside music CDs and videos. Under pressure from the IT sector, Internet access has at last been liberalised and other telecoms services may well follow.

For India's fast emerging technology companies, the web provides an ideal shop window for their services – and a level playing field on which to compete with rivals in the west.

Meanwhile, the government has taken steps to encourage both the use of IT in central and local government and – following the recent recommendations of the taskforce committee on hardware issues – has taken a series of steps to encourage local hardware assembly.

"We recognise the importance of IT to just about anything we want to progress in India, social policy, education and the economy," says Sudheendra Kulkarni, a member of the Prime Minister's Office and of the IT taskforce. "There has been a tremendous amount of progress in the last six months and just about every state government has an IT strategy."

Meanwhile, in India's main cities – Bombay, Calcutta, Madras and New Delhi – GSM mobile telephones have become must-have items for members of India's large and growing middle class. Even though local businesses complain that new fixed lines still take far too long to materialise, the fixed telephone system is showing some signs of improvement.

As import duties have been cut and tough new copyright laws enacted, pirated software has been replaced with strong sales of legitimate packaged software from companies like Microsoft, Symantec and Adobe. In industry, sales of high-end business software from companies like Germany's SAP are growing strongly as India's commercial and industrial business houses face up to the need to invest in IT to ensure that they can compete in both the liberalised domestic market and overseas.

"Potentially, this is a huge market," said one industry analyst with Caspian Research in Bombay. Indeed this improving domestic outlook is reflected in the financial markets. Shares of India's leading technology companies, particularly those with strong technology bases, product strategies or service offerings have soared over the past two years.

For example, shares in Infosys, the Bangalore-based technology group which plans shortly to list on Nasdaq, the computerised US stock market, have soared over the past year. This reflects the determination of people like N R Narayana Murthy, Infosys' chairman, to turn their companies into a world class software houses in the global market able to compete "on quality and productivity and not just cost."

Inevitably, the domestic Indian software market has had to live in the shadow of the dynamic export sector. It has nevertheless recorded strong growth in recent years. Last year, the domestic market grew by 45 per cent to Rs3.51bn led by strong operating system and office automation package sales and a 58 per cent surge in the sale of enterprise resource planning packages.

Overall, the National Association of Software and Service Companies reckons that overseas companies launched 140 new software packages last year, producing a bonanza for big re-sellers such as Bangalore-based Wipro. However, domestic packaged software vendors have also performed well. According to Nasscom, 140 new products from indigenous software suppliers were launched last year.

Other big domestic packages include Bancs 2000 developed by Infosys. While the financial services market is dominated by local Indian software developers like CITL and Infosys and new entrants like Synoptics – now owned by Britain's Logica group – the elimination of import duties on imported software has helped fuel a surge in packaged software, with sales climbing to Rs1.4bn.

Aside from Microsoft, whose Indian sales and operations are expanding rapidly, other multinationals targeting the growing Indian domestic market include SAP, Baan, Novell, Oracle and Computer Associates.

Among the fastest growing domestic market segments are sales of database products, Cad/Cam packages and financial accounting packages although the market for ERP systems – including several local products – remains the most dynamic.

Overall, there are more than 500 companies operating in the domestic Indian software market. Leading local companies include the government owned CMC group, Sonata, Tata Infotech and Bombay-based Mastek, whose products include the Mamis ERP package and Ramco, whose ERP package has won critical acclaim.

Together, these companies have begun to prove that besides providing offshore services, domestic Indian software developers can build innovative, leading-edge business software packages capable of competing in the global software markets.

Kishore Kapoor of CITL: 'In automation, the state banks have lagged behind the private sector'

India's IT giants

Group	1997-98 (Rs m)	1996-97 (Rs m)	Constituents
HCL	22,843	17,050	HCL Inage, HCL Insol, NIIT, HCL Consulting, HCL Perot, HCL Deluxe, HCL Comnet, HCL Peripherals, HCL OA
Tata**	18,858	16,718	TCS, TIL, Tata IBM, Tata Elxsi, TTL
Wipro	10,487	8,715	Wipro Infotech Group
HP	6,557	5,860	HP India, HP ISO
IBM*	6,447	5,770	Tata-IBM, IBM Global, Lotus
JTS Group***	5,836	6,220	JTS Inc. US
Godrej	4,418	2,223	GPTL
Compaq	4,350	3,599	Compaq India
Digital	4,016	3,208	Digital India
Microsoft	3,500	2,000	Microsoft India
CMC	3,271	2,424	CMC, Baton Rouge
Unicorp	3,146	2,325	Unicorp Industries, Unicorp Vietnam
Aptech	3,040	2,307	Aptech
Redington	2,873	1,710	Redington
Pentafour	2,845	1,715	Pentafour Software, Pentafour Communication
Acer*	2,736	2,851	Wipro Acer
Infosys	2,804	1,438	Infosys, Yantra Corp.
Patni Computers	2,475	1,738	PCS Industries, PCS UK, Data Conversion INC.
Tandon	2,405	2,231	Tancom, ATD, Kollmorgen, Tandon Info, Tandon Computers, Golden Computers
Sun	2,257	2,160	Sun India

* IBM and Acer revenues reflect total Tata IBM, IBM GS and Wipro Acer revenues respectively
** Indicates cases where the SAAP equity has been implemented
*** 50% equity is with JTS Inc. and not Tandon Group. Hence the name has been shown separately

Source: Dataquest

MULTINATIONALS by Paul Taylor

Big names drawn by high skills and low cost levels

To reap greater benefits from its rapidly growing expertise in IT, India now needs to move further up the scale into higher value business sectors

Big multinationals, particularly those in the information technology sector, "discovered" the benefits of India for high quality, low-cost offshore software development more than a decade ago.

Since then, India has become a magnet for foreign inward investment. It attractscompanies from a wide range of industries in the US, Europe and now Asia eager to tap the Indian market as a source of highly skilled and strongly motivated software engineers who are still available at a fraction of the cost of their western counterparts.

India has also been added to the global itineraries of senior IT industry executives keen to explore opportunities in the sub-continent for both sales and investment.

Recent visitors have included Bill Gates of Microsoft, Craig Barrett of Intel and Sanjay Kumar, president of Computer Associates, who was in India last month attending a large IT show in Bangalore, India's established IT "capital".

CA, which has targeted India for a five year $100m investment programme, already has a software facility in Calcutta and is now considering setting up an Indian development lab for its flagship Unicenter TNG software suite.

"Coming to India for low cost labour is a bad reason for coming here," Mr Kumar told the Economic Times, a local financial newspaper. "India can do well on a global scale in the IT industry. It has the intellectual capacity and the knowledge of English."

However, he also warned that India's position as a low cost offshore software producer was not sustainable over time. "Too much of what is happening in India is at the low [value] end."

Mr Kumar, one of the most prominent Indians in the US IT industry, said Indian companies needed to innovate more and move up the value chain if they were to survive, adding that India must quicken the pace of deregulation, particularly in the telecoms field, if it was to compete effectively in the world IT market.

CA is one of the latest converts to the Indian software development model, while Texas Instruments, the US chipmaker, was one of the first western companies to establish a "captive" IT development center in Bangalore.

TI, which moved into a stunning new facility in Bangalore three years ago, now has about 400 people there working on complex chip designs.

The Bangalore facility is at the forefront of TI's efforts to exploit its leadership in the fast growing market for DSPs (digital signal processors) which are used in many electronic devices ranging from mobile phones to modems.

Encouraged by government concessions and incentives, a steady stream of US-based IT multinationals have established captive software development units in Bangalore or elsewhere.

Video-conferencing and high-speed satellite telecommunications links supplied by VSNL (Videsh Sanchar Nigam Limited), India's international telecoms carrier, and the nation's dedicated Software Technology Parks have transformed these buildings into virtual offices that could just as easily be in the California, Cambridge or Osaka.

International projects

Many of these facilities are working on international projects and have worldwide responsibility for particular products, others are part of global development operations linking together Asia, Europe and the US in a seamless cycle. For example, Oracle, Novell and Motorola have all set up large Bangalore-based research and development labs serving their global operations and both Motorola and Oracle are currently expanding their Indian facilities considerably.

"We are continuing to grow" says Ranjan Chak, executive director of Oracle Software's Indian Development Centre (IDC) in Bangalore. As well as building a second facility in Bangalore, Oracle has also set up a facility in Hyderabad's fast developing High-Tec City, the brainchild of Chandrababu Naidu, Andra Pradesh's go-ahead chief minister. "Hyderabad will enable us to develop a new resource," says Mr Chak.

But despite Bangalore's overstretched infrastructure and notorious power problems, US, European and even a few Asian multinationals are continuing to arrive.

Among the recent new entrants are Siemens of Germany, which has established large software development operations, and Lucent, the US telecommunications group which has built a new facility next door to TI.

Other new arrivals include Germany's SAP, Ericsson of Sweden and Glaxo-Wellcome, the UK pharamaceuticals group. Sun Microsystems, which has a growing sales operation in India, is also understood to be considering an investment.

Nevertheless, as Bangalore becomes more crowded and attrition rates among software engineers reach even higher levels, some overseas investors are looking to India's other emerging technology centres to establish their Indian operations.

"Five years ago, there was no choice but to come to Bangalore," says Kunal Kashyap of Arthur Andersen. "Now, that is not the case. Hyderabad, Madras and Pune are all growing rapidly while Bangalore's infrastructure problems, power, and roads all get worse."

Microsoft, Oracle and Baan, the Netherlands-based enterprise resource planning software vendor, are all developing facilities in Hyderabad. Cisco, the US-based networking equipment market leader, has set up a software development facility in Madras in partnership with HCL, the Indian IT group whose other offshore partners include Perot Systems, Deluxe Corporation and James Martin.

After watching the success of established Indian IT centres like Bangalore, Bombay and Delhi, most Indian states have realised that fostering inwards investment in the IT sector has many positive economic benefits.

Competition for new investment is therefore intensifying at the same time as the labour market in cities like Bangalore becomes more problematic. Software engineers's wages are currently rising by about 25 per cent a year or more and attrition rates in Bangalore and some other areas are running at between 30 to 40 per cent a year as multinational companies and indigenous software developers vie for the experienced developers. "You cannot run a business on that basis," says Mr Kashyap.

The challenge of building an Indian software development centre from scratch is one of the factors fuelling a new wave of mergers and acquisitions in India.

FI Group, the UK-based computer services company, led the way last year when it acquired IIS Infotech, a fast growing Delhi-based software group built up by Saurabh Srivastava, for £22m.

"It has been a near perfect marriage of two companies," says Mr Srivastava. ISS is growing by between 50 to 60 per cent this year and now employs 1,200 people.

Since than Logica, another UK-based computer software and services group, has acquired Synoptics, an innovative Bangalore-based start-up which has developed a component-based banking package.

Meanwhile Rave Technologies, a Bombay-based start-up founded by entrepreneur Anand Jhaveri and which now employs 60 people, has merged with its UK-based partner, Karnatica. Revenues for the group, which has specialised in leading edge software development including Java-based projects, doubled last year. "The trend towards Java and web-enabled applications is very strong," says Mr Jhaveri.

Other Indian-based software groups, including HCL, Datamatics and Mastek are expanding their overseas operations in a bid to build truly global IT groups.

"We are looking at an acquisition in the US to give us the critical mass there," says Rahul Kanodia, Datamatics' joint managing director. The Bombay-based group, which has a number of top Japanese customers, is also planning to set up offices in Japan and the UK. It is likely that others will follow reflecting the growing internationalisation of the Indian industry as it begins to mature.

SOFTWARE EXPORTS by Paul Taylor

Remarkable growth rate continues

Foreign earnings have been moving ahead to record levels, with the US leading the accelerating demand for Indian software

India has emerged as one of the leading software exporters among developing countries with annual exports expected to top $10bn within the next three years.

"Exports have been growing very healthily," says Pradeep Gupta, managing director in India of International Data Corporation, the market research firm.

"We think that we have just scraped the surface," adds Sudhakar Ram of Mastek, one of India's top 20 software exporters.

The remarkable success of the Indian software export sector since the mid-1980s is reflected in the annual figures prepared by the Delhi-based National Association of Software and Services Companies (Nasscom).

Last year alone (1997/98), software exports grew by more than 67 per cent in volume terms and 55 per cent in terms of value to Rs65.3bn ($1.75bn).

Despite delays earlier this year in the approval of additional HIB visas for Indian software engineers working "onsite", and the threat of sanctions following the Indo-Pakistan nuclear tests, Nasscom still expects export revenues to grow by at least 50 per cent to Rs100bn ($2.7bn) in the current year.

Overall, software exports have been growing by more than 55 per cent annually over the last five years and the pace of growth shows no signs of slackening. "Last year was the highest growth rate ever for the Indian software export industry," says Dewang Mehta, Nasscom's executive director.

This growth partly reflects special factors like the surge of year 2000 conversion work triggered by the looming millennium computer date problem.

But it also reflects the growing maturity of India's software industry, and greater customer confidence in the industry's ability to deliver high quality products and services on time and within budget. These factors also help explain why, despite rising wage costs, India has been able to continue to increase the software export business in the face of growing competition from programmers in countries like Russia, China and the Philippines.

"India is unique in that it has a very highly educated population," says L S Kanodia, chairman of Datamatics and one of the fathers of India's software revolution. "The other great plus from the international point of view is that India is English-speaking in contrast to China and other countries."

Indeed, driven by the demands of offshore clients for low-cost, high-quality products and services, India's software export industry has become one of the most dynamic sectors of the Indian economy, a valuable foreign exchange earner and an important source of new professional jobs for India's expanding young middle class youth.

Indian software engineers maintain and update systems to help companies in the developed world remain competitive and react quickly to commercial opportunities. In the US, Europe and now Asia, a growing number of companies in the financial services, retail and manufacturing sectors, are increasingly dependent on Indian technical know-how.

The US is predictably India's biggest export market. About 60 per cent of Indian software exports go to the US and almost 160 out of the Fortune 500 companies outsourced their software requirements to India last year.

Europe is India's second biggest software export market and accounts for a growing share – 22 per cent last year. Five per cent of exports go to South East Asia, 4 per cent to Japan, 2 per cent to West Asia and 6 per cent to the rest of the world.

"This clearly shows that companies around the world can obtain competitive advantage through alliances with Indian software companies," says Nasscom's Mr Mehta. In Europe, companies like Siemens of Germany, British Telecommunications and Deutsche Bank all rely on Indian software developers and the changes needed to prepare for the introduction of the euro are likely to expand the European market.

Nasscom's own research suggests that work related to the introduction of the euro could be worth more than $2bn alone to the Indian software industry over the next three years – further augmenting the year 2000 conversion work which is currently under way.

The Indian companies undertaking this work are a diverse mixture of new start-ups, joint venture companies, foreign implants and spin-offs from some of India's oldests and most well-established industrial groups.

According to Nasscom, there are almost 630 companies in India involved in software exports – another 180 small companies collectively account for revenues of less than Rs100m). Together, these companies employ about 200,000 software engineers, making the second largest group of software professionals in the world after the US.

However, these companies vary dramatically in both size and structure. Last year, 14 companies exported more than Rs1bn of software and a total of 73 companies had export revenues of over Rs100m. Reflecting this growing stratification of the industry, the top 20 exporters accounted for almost 60 per cent of total exports.

Fourteen companies exported more than Rs1bn of software, while 73 companies had export revenues of over Rs100m last year

These big exporters include companies such as Tata Consultancy Services which alone had software exports of almost Rs9.5bn last year – nearly 15 per cent of the industry total. As a result, Bombay-based TCS emerged as India's biggest IT company, the first time a software group has held this position.

Other top 10 software exporters include Bangalore-based Wipro Systems and Infosys Technologies, the Delhi-based HCL Group, Pentafour from Madras and Satyam Computer Services from Hydrabad – India's fastest growing IT centre.

Most of these indigenous Indian software companies have emerged from existing Indian industrial groups, but the top 20 exporters list also includes foreign joint venture and "captive" companies like IBM Global Services, Mahindra British Telecom, Citicorp Information Technologies, Siemens Information Systems and Hewlett Packard India.

Typically local Indian software companies follow a similar development pattern as the move up the value chain. They begin by exporting cheap labour overseas or "body shopping".

This phase, which the Indian software industry entered in the 1980s, enables companies to build credibility with potential clients, and while margins in exporting cheap labour may be thin by international standards, low manpower costs mean exporters can still achieve healthy profits.

Secondly, they begin to bring work back to their home countries using cheap labour to provide offshore services. This type of contract or project-based work eliminates costly travel and helps build the local infrastructure.

In this phase, many Indian companies have established "software factories" or units dedicated exclusively to a single client. These high-security units – such as those established by companies such as Wipro, BFL and Madras-based Square-D – ensure confidentiality for long-term partners and operate as extensions to their in-house development teams.

For these companies, satellite communications remove distance as an obstacle to doing business. Six years ago, VSNL, India's international telecoms carrier, supplied just ten 64Kbps satellite data links. Now, Indian software companies have more than 590 leased lines capable of delivering 64Kbps or greater.

The shift from on-site to offshore work has been quite pronounced in the past decade. In 1990, the percentage of work done offshore was a mere 5 per cent. Today that figure has risen to about 41 per cent and continues to climb.

The next phase is to build packaged software products for export overseas, or provide high value-added services such as consultancy and systems integration. These are the highest margin businesses in the global software industry and the longer-term goal of most companies in India as elsewhere.

However, the packaged software business in particular requires more initial capital – which is in short supply in India – and is much more risky than contract work.

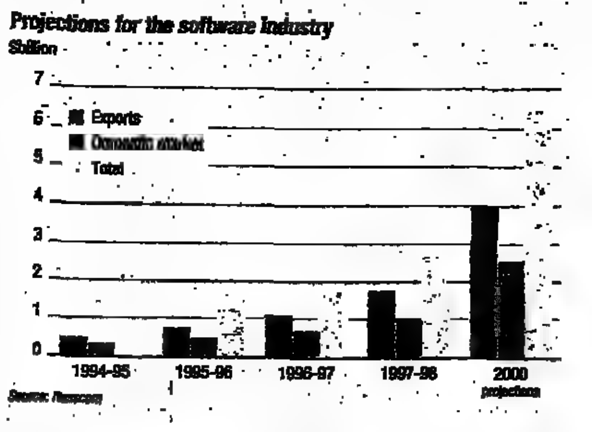
Successful products also require good market understanding and hefty marketing expenses which offset the cost advantages of developing software packages in a developing country.

Today, most Indian software companies undertake a variety of work for their overseas clients – maintaining applications, converting code or migrating software from one platform to another. But increasingly they are also undertaking more challenging work for their overseas clients or parents, including full-scale projects from design to testing and delivery.

Many of the larger Indian companies are also expanding their international presence. They are setting up offices in the US, Britain, continental Europe and now in south-east Asia and east Asia.

☐ Government initiatives: see report by Mark Nicholson in Delhi, page 4.
☐ Technology's impact on India: see report by Dewang Mehta, executive director of Nasscom on pages 4 and 7.

Projections for the software industry



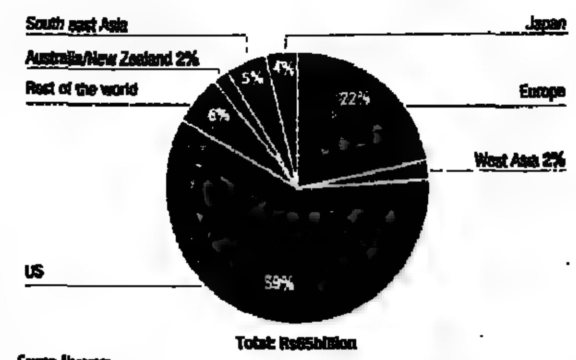
Source: Nasscom

India's top 20 software exporters

Rank 1997-98	Rank 1996-97	Company	Turnover (Rs m) 1997-98	Turnover (Rs m) 1996-97	Growth (%)
1	1	Tata Consultancy Services	9,491	6,068	564
2	-	HCL Corporation	7,309	-	-
3	2	Wipro	3,888	2,525	540
4	4	Pentafour Software & Exports	2,717	1,594	704
5	-	NIIT	2,583	1,612	600
5	5	Infosys Technologies	2,472	1,252	973
6	7	Satyam Computers Services	1,781	852	1,090
7	6	Tata Infotech	1,723	1,085	616
8	8	Patni Computer Systems	1,376	848	620
9	11	Tata IBM	1,264	663	914
10	10	DSQ Software	1,167	676	726
11	9	International Computers India	1,086	827	313
12	12	Mahindra British Telecom	992	627	580
13	-	L&T Information Technology	990	-	-
14	13	Mastek	859	577	488
15	15	Citicorp Information Industries	751	532	410
16	14	Siemens Information Systems	720	553	303
17	17	CMC	662	342	935
18	16	HP India Software Operations	568	439	290
19	19	Complete Business Solutions	545	184	1,959
20	18	BFL Software	527	321	641

Source: Dataquest

Software exports



Source: Nasscom

Sudhakar Ram of Mastek, one of India's top 20 software exporters, says: 'So far, the industry has just scraped the surface.'

TECHNOLOGY'S IMPACT by Dewang Mehta

Rural India on the info highway

Millions of India's villagers who, as yet, do not have telephones in their homes, can nevertheless walk to the village phone booth and dictate Internet messages

Her face hidden behind a colourful veil, an illiterate woman stepped in front of a computer screen in a remote rural district of Uttar Pradesh, a state in northern India.

Chameli Devi was amazed when she saw and heard a message from her husband, Ram Singh, in the small public telephone office in Jaunpur last month. He had recorded it from a similar booth in Mumbai, 1,240 km away.

The couple inaugurated the world's first commercial video-email that will eventually enable millions of poor-illiterate people to communicate cheaply.

Costing Rs15 for a three-minute message, the facility transmits video images and the voices of users to e-mail accounts just like text messages.

Devi, who works in her fields and knows nothing of computers or electronic mail, paid the booth owner Rs10 extra to open a standing e-mail account, including her husband's picture that is stored on a hard disk at the booth. Until now, Devi had to wait weeks for surface mail from her husband, whom she sees only for one month a year. The facility, likely to be launched in several public booths across India, will also provide video e-mail messages in local languages.

This e-mail facility was tested by inviting 18 Mumbai taxi drivers who come from Jaunpur to record messages for their wives and children back home.

The Government of India's information technology taskforce has suggested various means of propelling large numbers of Indians towards the global information revolution which has so far touched only a fraction of the country's nearly 1bn people.

Despite a boom in the use of computers, India has an installed base of only 2.3m personal computers and about 130,000 Internet subscribers, with each connection, on average shared by up to five people. The communications ministry has said it will provide all district hubs across the country with Internet connectivity.

Dewang Mehta: Internet facilities will become widespread

Poor illiterate villagers, who do not have telephones and do not write letters, can now walk up to the phone booth and dictate Internet messages.

This is almost an Internet revolution. Thus not only the urban population but even rural Indians have started stepping onto the information superhighway. All of this is taking place under the backdrop of the opening up of Internet access in India.

The Internet policy announced by Atal Behari Vajpayee, the Indian Prime Minister, last month is expected to unleash hundreds of private Internet Service Providers in India.

According to a survey conducted by India's National Association of Software and Service Companies (Nasscom), the country is projected to have more than 1.5m Internet subscribers by the turn of the century.

Undoubtedly, the software industry is ecstatic as more Internet proliferation would not only mean more business opportunities – such as Internet web designing, content development and e-commerce – but also more literacy and employment.

Today, there are more than 1,000 companies offering web design and content development services in India. These companies specialise in the latest technologies and are gearing up to transact e-business on the net. But for that, there is a need to introduce cyberlaws in the country.

New IT Act

India's department of electronics has done extensive work in drafting an Information Technology Act, which will be introduced in the Indian Parliament this month.

This will not only contain provisions for digital signature, but also amend outdated laws. Political observers believe the proposed Information Technology Act will have a smooth sailing in parliament as all political parties are in the favour of enacting cyberlaws.

The provisions of the Act are in conformity with the WIPO Copyright Act and the WIPO Performance and Phonograms Treaty. Legal experts believe that many provisions of this act are at a par with the Digital Millennium Act, introduced in the US Congress.

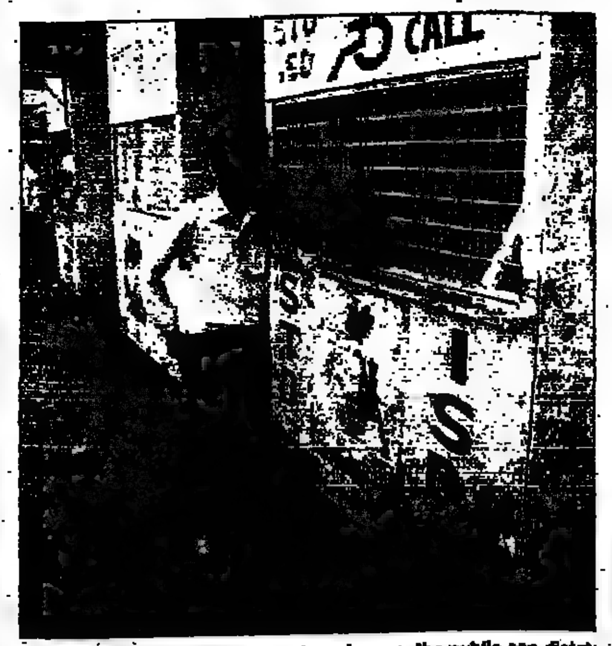
In yet another exercise, the government and the industry is also gearing up towards content development on Internet. Already, Nasscom is setting up a National Internet Centre of Excellence.

The objective of NICE is to create standards for Internet content for local languages and also to promote excellence in development of Internet web sites and databases. It would also undertake training of teachers.

Undoubtedly, India today houses the second largest English-speaking scientific manpower pool in the world. But, for a nation of almost 1bn people, only 4 per cent are proficient in English. Therefore, there is a strong effort to push Internet in local languages.

Proliferation of Internet in local languages may be more through cable television rather than a conventional personal computer. India has already seen a real proliferation of cable TV connections. If the installed base of personal computers in the country, is only 2.3m, then India boasts of 37m cable TV connections.

This is the second largest volume of cable TV connections in any country of the world. The cable TV industry has mushroomed largely due to its entertainment content, which has tremendous local flavour. For the Internet to proliferate in India, the flavour of local content and innovative methods such as video e-mail would have to be devised.



E-mailing the world: in urban and rural areas, the public can dictate Internet messages from public call offices

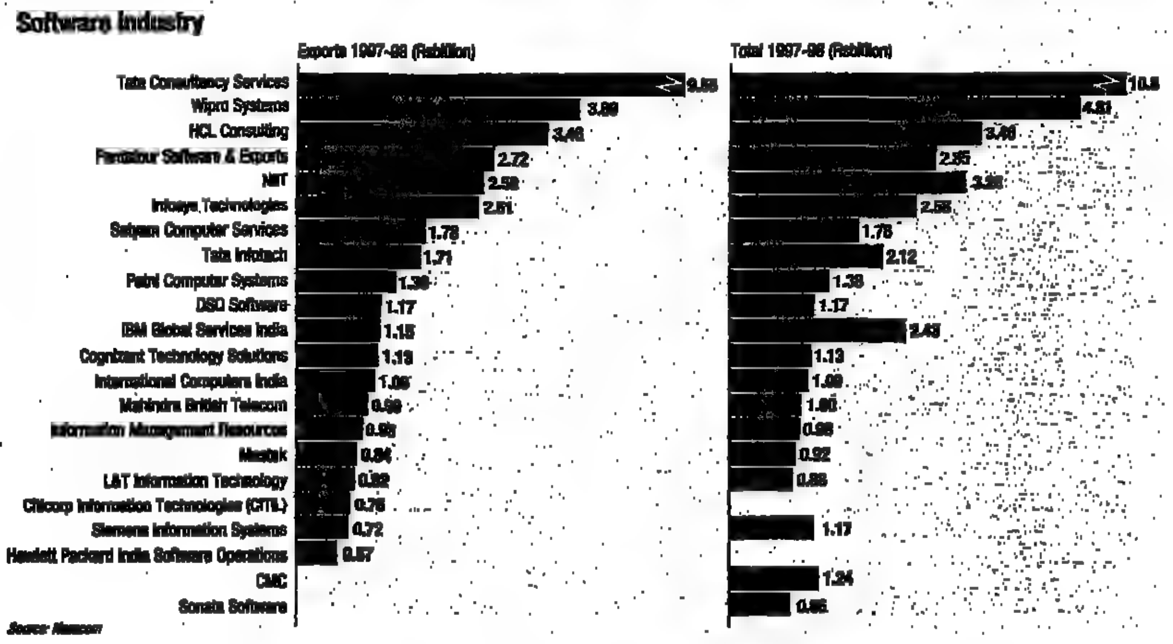
Cities such as Mumbai, Bhubaneswar, Pune, Hyderabad and Bangalore are laying fibre optic for cable TV so that consumers can gain access to the Internet by installing extra set-top boxes on their TVs.

Experts in software industry believe that widespread Internet proliferation in the country through unlimited number of ISPs would not only lead to a huge volume of e-commerce, but also to products and packages being developed in the country. In addition, the Internet could also be used for distance education through the concept of virtual universities.

For a vast country like India, the arrival of private ISPs, could not have been at a better time.

☐ *The writer is executive director of India's National Association of Software and Services Companies, Nasscom.*

Software Industry



GOVERNMENT INITIATIVES by Mark Nicholson

Task force cuts red tape to spur IT sector growth

The rapid growth of India's software market has been helped by the absence of bureaucratic interference and excessive controls

If there is a sense of momentum behind the Bharatiya Janata party-led government's drive to promote software and information technology – among its more successful initiatives so far – it is probably partly because there is no ministry of software and information technology.

Indeed, some of the software industry's pioneers have long said that the industry was helped to flourish in the late 1980s and since by the fact that it fell under no existing industrial or exporting licences or controls. None of India's dated, fusty and centrist controls anticipated the technological revolution which spawned the sector, no ministry was in place to constrain it with bureaucracy.

"If you look at two of the things India is best at, it is because there is no ministry," jokes Dewang Mehta, executive director of the National Association of Software and Service Companies. "One is our beautiful women, another is software. There is neither a department of software nor of beauty."

Thus, when the BJP-led government made IT development a priority, it was able to start more or less with a clear field. And the sector has from the outset been identified by the BJP as a priority. It was the sole party to devote attention to the sector in its election manifesto, partly a reflection of the fact that the success of India's software industry appealed directly to the party's strong economic nationalist agenda. The party speaks of making India an "infotech superpower".

Soon after taking power, therefore, and to create a change agent in the absence of any existing department, the BJP created a national task force on information technology.

This is an 18-strong body drawing together bureaucrats from appropriate ministries, politicians, including Chandrababu Naidu, the "high-tech" chief minister of Andhra Pradesh state, and industry leaders; it is headed by Jaswant Singh, deputy chairman of the planning commission. Uniquely, the task force imposed on itself a series of deadlines for its reports and initiatives, and set itself an expiry date of December this year.

Prime Minister Atal Behari Vajpayee launched the National Taskforce for IT and Software last May

Constituted on May 22, it issued its first recommendations on July 5. These comprised 108 detailed recommendations embracing everything from moves to clear existing bottlenecks hindering the software and IT sector, promotional policies and guidelines for an overall "national information technics policy", including full and liberal recommendations for an Internet service provider policy.

The whole was officially gazetted by July 25, and the task force has since produced a report on the hardware sector, while also being handed responsibility for reviewing India's overall telecoms liberalisation policy, a giant task and one which, say its members, derives from the "credibility" the unit has won.

Although not all that the task force has recommended has yet become full-blown policy, nevertheless it has, by Indian standards, been something of a whirlwind. "I don't think in recent history have so many resolutions been formed and passed so fast," says Mr Mehta, also a task force member and its spokesman.

Behind its success, say insiders, lies its relative nimbleness and energy. Though notionally 18-strong, the task force has been driven along chiefly by three individuals: Mr Mehta, whose industry lobby, Nasscom, is among India's best organised, N. Seshagiri, director of India's national informatics centre and a hugely experienced bureaucrat and Sudheendra Kulkarni, a former journalist and member of the prime minister's office, whose belief in India's IT potential borders on the messianic.

Throughout, the task force has had the full backing of Atal Behari Vajpayee, the prime minister, with whose authority, say insiders, Mr Kulkarni has wheedled, cajoled and organised various other government departments in behind the proposed IT policies.

"For someone so new to the system, he certainly knows how to work it," says a close observer. It has also helped that Nasscom has long had a well-articulated series of policy demands in place and upon which the unit could draw.

Thus, among the task force's gazetted recommendations, have been amendments to the depreciation rate on computers, from 25 per cent a year to 60 per cent, policies to allow "sweat equity" for software employees, moves to underpin greater bank lending to the sector, commitments to accelerate the duty schedule for all IT products, to make them all zero rated by 2002, a fully fledged and liberal Internet policy and various customs and export exemptions.

The unit has successfully pressed for Indian software companies for the first time to list on overseas exchanges, and to use foreign exchange to purchase companies abroad.

Not all these policies have yet been implemented. And the test of the BJP's IT drive will lie in ensuring that those policies whose implementation lies under the often dead hand of other government agencies are, indeed, effectively put in place.

The biggest achievement, however, according to Mr Kulkarni, is to have "created a certain atmosphere" of momentum behind IT in the country – and perhaps also within the bureaucracy.

"It is in conveying to the nation that there is a big opportunity for India, that here's an area where India has a natural advantage and that we must not lose time. We are in the process of changing the mindset and ensuring the government facilitates and does not hinder the process. And we have to, at the same time, acknowledge that much that has happened in India in this sector is not because of the government, but despite the government."

Message from

Prime Minister Mr Atal Bihari Vajpayee

IT is India's Tomorrow

Information Technology is one of the greatest boons of science to humanity. It is revolutionising life on this planet like no other technology has in human history. It has been impacting on the economy, communication, culture, educational system and social interaction in all the countries, bringing them closer in a world transformed into a Global Village and laying the foundation for a new civilisation. India, as the cradle of civilisation, is poised to become a major IT power in the coming years and contribute to the realisation of its many promises for our own benefit and for the global good.

My Government's commitment to IT is evident in the path-breaking work done by the National Task Force on Information Technology in just six months. We are removing the bottlenecks in the path of software development, aiming to export $50 billion by 2008. We are planning to make India a major centre for hardware manufacturing and exports. Recognizing the indispensable need to expand and modernise our telecom infrastructure to world standards, we are undertaking fundamental reforms in policy. The new policy will create a competitive and well-regulated environment to harness the full benefits of convergence between telecom, IT, media, and consumer electronics. The recently announced liberal ISP policy, which removes the existing public-sector monopoly, is a pointer to the direction in which we shall move.

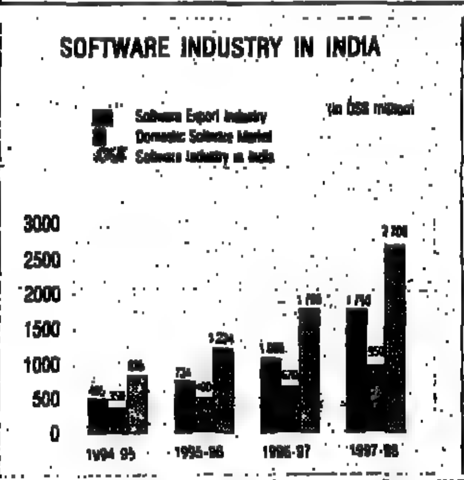
India's new focus on IT has naturally opened up tremendous opportunities for foreign IT companies and professionals for investments, joint ventures, R&D, and import and export of goods and services. Not only the Central Government, but also all the State Governments are creating a supportive framework to facilitate domestic and foreign investments. I believe that IT is India's Tomorrow. I invite you to participate in ushering in, and benefiting from, this bright tomorrow.

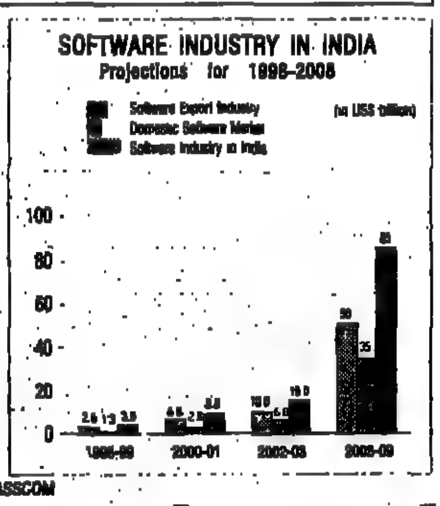
Prime Minister

Expanding Horizons in Connectivity

The Software capabilities are being ably supported by the infrastructure required to support its marketing and access. In this connection a National Information Infrastructure is being developed so as to put in place a complete system on information sharing nationwide. It is being further dove-tailed with the Global Information Infrastructure and Local Information Infrastructure (GII-NII-LII).

These strategies have been given impetus by the liberalisation of the Internet Connectivity Policy announced on November 6, 1998 as per which Private Service Providers are invited to enter the Internet Service Market which was hitherto handled by one public sector company. Now any company in India can, with upto 49% foreign equity, apply for a license to provide Internet Services. The licence shall be valid for 15 years and there shall be no licence fee for the first five years and would be a token Re one for the subsequent period. Private ISPs can obtain transmission links from DoT, licenced Basic Service operators and a host of other agencies. It is expected that this policy would help further consolidate and develop the Software competence available in the country.





Source: NASSCOM

Accelerating IT Development In India

National IT Task Force draws up path-breaking Action Plan

Information Technology (IT) has been the greatest change agent of this century and promises to play this role even more dramatically in the coming decades. IT is changing every aspect of human life - communications, trade, manufacturing, services, culture, entertainment, education, research, national defence and global security. IT is breaking old barriers and building new interconnections in the emerging Global Village. IT has also become a chief determinant of the progress of nations, communities and individuals.

For India, the rise of Information Technology is an opportunity to overcome historical disabilities and once again become the master of one's own national destiny. IT is a tool that will enable India to achieve the goal to becoming a strong and prosperous nation. In doing so, IT promises to compress the time it would otherwise take to advance rapidly in the march of development.

India has already developed a reputation as a haven for software development. In the fiscal year 1997-98, the Indian software generated revenues worth US $ 2.7 billion, with annual software exports of US $ 1.75 billion. More than 158 of Fortune 500 companies either have their own software set-up in India or tie-ups with Indian Software Companies. A World Bank funded study has also confirmed that 82% of the vendors interviewed in USA chose India as their #1 choice for computer software outsourcing.

Indian software companies have the unique distinction of providing efficient software solutions with cost and quality advantages, using state-of-art technologies. They also have the capacity to handle large projects, and, above all, the ability to execute timely deliveries.

Undoubtedly, overseas companies are attracted to India for many reasons. The presence of a large, highly skilled pool of professionals is one of them. Software is fast moving towards numero uno status in the Indian economy.

India today has the second largest pool of English-speaking scientific professionals in the world, ranking right behind the US. It also has a growing bank of 4 million technical workers. There are over 1715 educational institutions and polytechnics that train more than 55,000 computer software professionals on an annual basis. This is in addition to the graduates coming out of the Indian Institutes of Technology (IITs).

Such large, technically skilled resource has further helped the rapid growth of the software industry in India. With a compounded annual growth rate of more than 55% between 1992 and 1997, the Indian software sector has expanded almost twice as fast as the world-leading U.S. software industry did during the same period, though from a smaller base.

The Government of India has recognised the potential of Information Technology for rapid and all-round national development and this has also been highlighted in the National Agenda for Governance of the Government. In his first televised address to the Nation on March 25, 1998, the Prime Minister Mr. Atal Bihari Vajpayee declared that promotion of Information Technology would be one of his Government's five top priorities.

Committed to international standards

Accordingly, a National Task Force on Information Technology and Software Development was constituted in May 1998. This Task Force is chaired by Mr. Jaswant Singh, Deputy Chairman, Planning Commission, and co-chaired by Mr. N. Chandrababu Naidu, Chief Minister of Andhra Pradesh, and Dr. M G K Menon, former Minister of State for Science and Technology. Its members include eminent representatives from the Government, industry and academia.

The Task Force's mandate included recommending immediate steps that the Government needed to take to remove bottlenecks in the path of rapid development of IT in India and give a big boost to Indian IT and software industry. This was promptly responded to in about a month's time in the form of an Information Technology Action Plan, containing 108 recommendations covering both bottleneck-areas and broad promotional measures that are crucial for boosting IT in India. A basic objective was to create the policy ambience for a target of a US $ 50 billion annual export of IT Software and IT services by 2008, over a commensurately large domestic IT market spread all over the country. The IT Task Force's recommendations for the software industry were not only quickly accepted by the Government, but many of them have already been implemented. Within 10 days of Task Force's first report, the Finance Minister announced a series of incentives for the software industry in India.

The second report of the IT Task Force on Hardware was submitted on November 3, 1998 and its recommendations are being studied by the Government.

Some of the highlights of the IT Task Force recommendations accepted by the Government of India may be summarised as follows:

● Tax incentives ; 100 percent income tax exemption to exports of IT Enabled Services like medical transcription, call centre, data processing, internet content development: this is in addition to the tax exemption already granted to software exports; zero duty on all kinds of IT software; no withholding tax on remittance of money of royalty on

Mr Jaswant Singh, Chairman of the National IT Task Force presenting the second Report of the Task Force on Hardware to the Prime Minister Mr Atal Behari Vajpayee on November 3, 1998

computer software, no service tax on the computer software industry.

● Customs Bonding : The Policy to exempt software developers and exporters from physical and customs bonding at various export promotion schemes such as Software Technology Parks (STP), Export Oriented Units (EOU), Export Processing Zones (EPZ), etc. is aimed at freeing the software industry from local restrictions.

● Finance and Venture Capital : The Government of India has directed nationalised banks to provide additional Working Capital worth US $ 300 million to the software industry; the concept of sweat equity accepted and international norms of venture capital introduced. Government to provide venture capital environment and state owned funds of US $ 50 million to be made available for venture capital for the software industry; the government has streamlined and liberalised the policy on mergers and acquisitions; and easy access to funds for investing overseas.

● Infrastructure : Setting up of 50 hi-tech habitats all over the country; setting up National High Speed Telecom Backbone; an unlimited number of private Internet Service Providers (ISPs); encouraging private parties to set up software technology parks and providing them with tax incentives.

A special thrust area in the 'IT Action Plan' is the creation of a liberalised policy and procedural environment in the telecom sector which provides the key infrastructure for the IT industry. A large number of initiatives have been recommended in this area. They include: ending of the Videsh Sanchar Nigam Limited (VSNL) monopoly on international gateway for Internet access, access to Internet through Cable TV. Internet access nodes to be opened by the Department of Telecommunications and authorised Internet Service Providers (ISPs) in all district headquarters by January 26, 2000, and, until then, Internet access from the nearest node on local call rates; upgradation of STD/ISD booths into full-service 'information kiosks' offering e-mail, voice mail and Internet and permission for the Railways, Defence, State Electricity Boards, National Power Grid Corporation as well as organisations like Oil and Natural Gas Commission (ONGC), Gas Authority of India Limited (GAIL) and Steel Authority of India Limited (SAIL) to use their fibre optic backbone to provide service to the public by interfacing with existing or new public networks.

The 'IT Action Plan' has recognised the importance of the 'last mile' problem in reaching Internet and IT services to the end-user. Towards this end, it has recommended free permission for 'last mile' linkages by either fibre optic or radio communication for IT application enterprises. Another measure in this direction is the opening of radio frequency band in the range of 2.4 - 2.485 GHz for public wireless services.

The new policy allows interconnectivity between public and private networks, immediate clearance of bandwidth requests from public or private sector Software Technology Parks (STP), to boost 'Call Centre' business in India to handle employment-intensive back-office jobs of overseas organisations.

● Manpower : Setting up of Indian Institutes of Information Technology (IIITs), industry to set up Institute of Computer Software Professionals of India (ICSPI); Internet and computers in every school and college by 2003; output of 1 million computer software professionals from universities, institutions, IITs in next five years.

● Domestic Market : Mandatory government spending for purchase of IT; concept of Electronic Governance; public procurement policies; 60% depreciation on computers and 100% on software; mandatory IT training for new government employees; massive encouragement and implementation of electronic commerce / EDI. These measures may lead to more than US $ 35 billion of domestic software market by year 2008.

● Cyber Laws : New Cyber laws in the form of Information Technology Act in complete conformity with WIPO and other International Laws, Digital Signature Laws as well as prevention of computer crimes, to be introduced.

Establishment of the Task Force at the national level has also had a favourable impact on state governments. Virtually every state is now competing to provide a congenial environment with state-of-the-art modern hi-tech infrastructure and plug 'n' play facilities, so that Indian and overseas companies can immediately set up their software operations.

According to NASSCOM (India's National Association of Software and Service Companies), the first six months of fiscal year 1998-99 has already generated a record growth of 65.5 percent in software exports. In the current year, software exports are expected to touch US $ 2.6 billion. With Government of India giving additional tax benefit for IT Enabling Services, more and more multinationals in USA, Europe and Japan are finding the Indian environment extremely suitable for IT Enabling Services. These include Airlines, Banks, Health Agencies and many manufacturing and service companies who want to outsource their requirement of back-office operations, revenue accounting, call centres, medical transcription etc. to India. Additional training facilities and availability of skilled manpower is adding to this attraction.

At the same time, industry has taken initiative on the quality front. Already SEI Level 3 and 4 have become the order of the day. More and more companies are acquiring ISO 9000 certification. Till date, more than 131 companies have acquired 9000 quality certification.

The lifeline for software industry is internet. Based on the IT Task Force recommendations, the government has opened up internet for private service providers. This has already created a wave of enthusiasm in the global software industry. Almost a one billion population is definitely a very attractive market for any internet or software company in the world and next five years would witness a high proliferation of computers and Internet in India. Providing extra bandwidth at concessional rates for high speed data communication including 64 kbps, 2M and above, the industry expects more than 60% growth in offshore software development in next five years.

The ultimate aim is to reach an annual software exports revenue of US $ 50 billion by 2008 and almost US $ 35 billion of domestic market in the same year, leading to additional jobs for 2 million people. An environment which will make India a software superpower. These were the very words echoed by Bill Gates when he visited India.

A conscious effort is being made for spreading the IT culture to all walks of economic and social life of the country. Towards this end, the Government has given 100 percent depreciation on all IT products in two years. Software and IT services industry will be treated as priority sector by banks for next five years. Working capital requirements for the industry will be tripled from the current level of Rs. 4 billion to Rs. 12 billion by the year 2000 and incentives are given for proliferation of software development in smaller cities and towns.

The new policy gives a slew of measures to maximise the use of IT in Government. Some of these measures are: each Ministry/Department to earmark 1-3% of the budget for IT; each Ministry/Department to prepare a five year IT plan; a fund of Rs. 7000 million to tackle the Y2K problem in the computers in Government organisations. IT literacy to be made an essential requirement for all future government and public sector employment.

Large national projects are being initiated with the objective of proliferating Personal Computers (PCs) and Internet linkages through the length and breadth of the country. An 'Operation Knowledge' campaign has been launched for universalising IT education and IT-based education in the country. To increase PC penetration in the education sector, low cost and affordable computer purchase schemes are being put in place to enable every school, teacher and student desirous of buying computers to do so under attractive financing packages. The Government announced that every school, polytechnic, college and university will have Internet access by the year 2003. As a first step in this direction, all the Engineering Colleges, Medical Colleges and University libraries will be fully networked by the year 2000.

Semiconductor Complex Ltd. Mohali

Other measures for the spread of PC and Internet/Intranets/Extranets are the Court Information System linking the Supreme Court of India with all the 18 High Courts and 440 District Courts, computerisation and networking of Hospitals, Informatics support to tourists, among others.

The IT Action Plan has brought about a new paradigm in setting up IT Software manufacturing units for making them viable in the Indian context. A policy framework is given for making the Indian IT industry strong enough to meet the demands of a zero duty regime under the WTO-ITA by the year 2003.

A soft-Bonded IT Unit (S-BIT) scheme will seamlessly integrate the local and export production for maximising the economy of scale and substitute a-posteriori controls for the existing a-priori controls so as to maximise the velocity of business. For this, export obligation is substituted by self-regulated export incentives and physical controls replaced by fiscal and procedural controls. A bold concept which may sooner or later spread to other manufacturing industries, is that all clearances, including Customs, will be on the basis of a Legally Enforceable Undertaking of self-declaration without insisting upon any a-priori permits or inspections. It will only be subject to a strict post-audit.

IT product manufacturing zones will be given priority status and IT will qualify for consideration as an infrastructure industry. While no duty is charged for any import of raw materials, components or capital goods in S-BIT Unit, concessional rates of duties applicable to imports will be charged only when the manufactured IT goods are sold into domestic tariff area. The concessional rates include an additional export incentive for units exporting the manufactured goods.

Even as the IT Action Plan reports have been put on the World Wide Web of the Internet, a number of companies around the world have started making plans for setting up large manufacturing plants for IT goods in India because of such a congenial policy and business environment that will be ushered in by the new policy framework.

IT initiatives at the state level : Creating an enabling environment

The opening up of the Indian economy and effects of globalisation and the natural thrust towards Information Technology has created a new enthusiasm in the country. While the Prime Minister of India set up the National IT Taskforce in May 1998, the Chief Ministers of various State Governments have soon followed by setting up state level IT Task Force(s), committees and even setting up Departments of Information Technology (DoIT) in their respective states. In the last six months, as many as 14 of 26 State Governments of India have already set up IT departments. Predominantly, the objectives of these IT departments are to promote and invite investments in the sector of software, hardware and telecom in the state. They also lay emphasis on increasing the use of IT in Government as well as implementation of IT applications for the benefits of their respective citizens.

Over the years, it is well known that Bangalore in Southern India has emerged as an international software centre popularly called as the Silicon Valley of India. But now, many more cities in India like Hyderabad, Chennai, Mumbai, Calcutta, Pune, New Delhi, Kanpur, Jaipur, Thiruvananthapuram, Noida, Gurgaon, Chandigarh, Indore, Goa, Bhubaneshwar, Gandhinagar etc., have joined the movement. Very soon, India would have at least 50 such hi-tech IT habitats which will provide world class state-of-the-art infrastructure. To increase skilled manpower availability, many State Governments have started establishing centres of excellence including Indian Institutes of Information Technology (IIIT). The first such IIIT at Hyderabad has already begun its academic session in September 1998.

Most of the State Governments have also taken up ambitious projects of wiring up their status through LAN, WAN, Internet and high-speed satellite connectivity. With the influence of National IT Taskforce recommendations, computerisation at the State Government level, at the state-owned State Corporations, colleges and schools have considerably increased. These especially relate to Electronic Governance, E-Commerce, mandatory spending on IT in Government and nation-wide resolution to provide computers and Internet connectivity to every school and college of India in the next five years.

ANDHRA PRADESH

- Chief Minister N Chandrababu Naidu, is implementing his vision to transform Andhra Pradesh into a knowledge society.
- HITEC city with state-of-the-art integrated infrastructure and advanced datacommunication facilities being set up on the outskirts of the state capital, Hyderabad. First phase offering 500,000 sq.ft. of floor space built with an investment of Rs. 1 billion completed in a record time of 15 months.
- The first Indian Institute of Information Technology (IIIT) has already started academic session in September 1998, with corporate schools set up by IBM, Microsoft, Oracle, Satyam etc.
- Software Technology Park (STP) with state-of-the-art datacom facilities located in the heart of Hyderabad. STP also coming up at Vishakhapatnam.
- Wide Area Network (WAN) connecting state secretariat and all district headquarters and sub-divisions complete with video-conferencing.
- A new Department of Information Technology (DoIT) is set-up.
- Electronic Governance as a priority for the benefits of citizens.

ASSAM

- A Software Technology Park in greater Guwahati proposed.
- Enhanced use of IT in government including setting up Video Conferencing facilities and establishing LAN linkages at state headquarters, district and sub-divisional headquarters.
- Generating greater public awareness and increase in computer education and training.

DELHI

- The capital of India being selected amongst the first five IT Habitats of the country. The Government of Delhi proposes to have Hi-Tech city with state-of-the-art infrastructure to be built near Delhi International airport.
- Presence of engineering colleges, IIT and many reputed centres of excellence.
- Department of Information Technology set up with massive drive to computerise the government.
- IT education in schools and colleges being given extra thrust with focussed training on IT Enabling Services.

GOA

- State-of-the-art infrastructure at Software Technology Park at Verna.
- IT Super corridor with fibre-optic being built through Panaji-Vasco-Verna-Margaon.
- Trained English speaking manpower from engineering colleges and universities. Indian Institute of Information Technology (IIIT) and Virtual universities being set-up.
- Wide ranging incentives being given in State IT Policy.

GUJARAT

- Plan to set-up state wide information corridor connecting State capital to districts and sub-divisions.
- State-wide information kiosks and database enabled services to be set up by Department of IT in various stages by the year 2002.
- Presence of reputed engineering colleges and IIM. Proposal to set up Gujarat Institute of Information Technology for higher education in IT.
- Software Technology Park at Gandhinagar and proposal to set up additional parks at Ahmedabad and Baroda.
- Proposal to set-up Dedicated Air Cargo Terminal for hardware and software units.

HARYANA

- Presence of Software Technology Park (STP) and Electronics Hardware Technology Park (EHTP) at Gurgaon, located next to Delhi's International airport.
- First State in India, to provide internet access to all Districts.
- Haryana State Electronics Development Corporation (HARTRON) provides one-stop services for IT infrastructure requirements.
- Increasing thrust on Government computerisation and setting up of IT Educational Institutes.

JAMMU & KASHMIR

- Software Technology Park being planned at Srinagar.
- Massive computerisation drive in State government.
- IT Enabling Services being declared as a thrust area.
- State government preparing a blueprint for promoting more education, employment through IT for its citizens.
- Tourist paradise and software paradise.

KARNATAKA

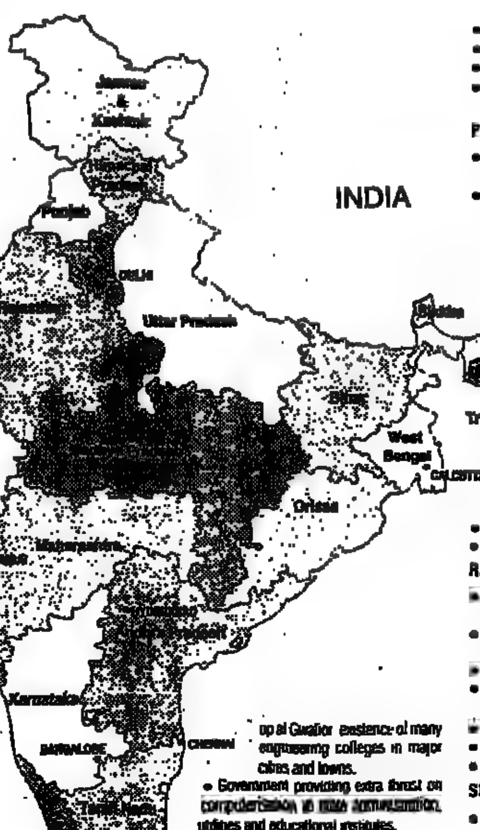
- Bangalore - the state capital of Karnataka is already known all over the world as the Silicon Valley of India.
- First state to announce a comprehensive IT policy. Department of Information Technology (DoIT) already set-up.
- Presence of engineering colleges, Indian Institute of Science and now setting up of government + industry led Indian Institute of Information Technology at Bangalore.
- Electronics city located on the outskirts of Bangalore; Software Technology Park in Bangalore and Mysore and now also serving Manipal; Information Technology Park at Whitefield, Bangalore.
- Concepts of Electronic kiosks, Electronic governance and state-wide network being established.

KERALA

- Establishment of state-of-the-art infrastructure with a communication backbone, switches, nodes, access networks and data warehouses.
- Technopark campus at Thiruvananthapuram with International standard infrastructure provides for a one-stop facility for IT companies to set up operations.
- Comprehensive IT Policy.
- Incentives and concessions for IT ventures.
- Computerisation of government services.
- Special Schemes for Human Resource Department in IT.
- PC Penetration Rate planned to increase to 10 per 1000 by 2001.

MADHYA PRADESH

- State-of-the art infrastructure at Indore and Bhopal including state owned Software Technology Park. OPTEL, the nodal one-stop agency for providing all requisite facilities to IT companies.
- Indian Institute of Information Technology and Management being set up at Gwalior. existence of many engineering colleges in major cities and towns.
- Government providing extra thrust on computerisation in state administration, utilities and educational institutes.



MAHARASHTRA

- Mumbai (Bombay) is known as the business and financial capital of India and provides state-of-the-art infrastructure for IT industry at SEEPZ, CIDCO's International Infotech Park at Vashi, Navi Mumbai; Millennium Park of MIDC at Mumbai.
- Software Technology Park at Pune and coming up at Nagpur.
- A Hardware Park to be set up over an area of 400 Ha in Navi Mumbai.
- IIT at Mumbai. Many engineering colleges in Pune and Nagpur and now Indian Institute of Information Technology (IIIT) being set-up.
- Department of Information Technology at the state government looking after government computerisation.
- 'Wired Villages project' launched at Warana Nagar for the benefit of Rural Population, will be replicated in other regions of the state.

MANIPUR

- Computer Software development and Electronics are identified as thrust area.
- High priority to Government computerisation and IT training in Schools, Colleges and University.
- Tourist paradise converting to IT paradise.
- Presence of training institutes for Human Resource Development for IT industry.

ORISSA

- State-of-the-art Software Technology Park (STP) launched with all facilities at Bhubaneshwar in October 1998.
- Comprehensive IT Policy.
- Availability to trained manpower, power, housing; modern built-up space.
- Bhubaneshwar amongst the first five IT Habitats identified for the country.
- Bhubaneshwar very soon would provide Internet access through cable TV.

PONDICHERRY

- Almost 100% computerisation in Government departments with Internet connectivity.
- Financial assistance, tax holiday and single window clearance for setting up of new IT operations.
- No sales tax and no entry tax.
- Proposal to set up Software Technology Park.
- Well planned infrastructure with access to national highways and Chennai international and national airport just 2 hours away.

PUNJAB

- IT has been declared as a high priority area.
- Special incentive package for IT industry like Sale Tax exemption, Octroi Exemption.
- Special subsidy and incentives for IT in Gurmukhi script.
- Computerisation of government services and establishment of Local Area Network and Wide Area Network.
- Semiconductor Manufacturing Complex at Mohali, near Chandigarh.
- Software Technology Park (SOFTOP) at Mohali, near Chandigarh.

RAJASTHAN

- Promotion of an Information Technology Park and Electronics Hardware Technology Park at Jaipur.
- Offers incentive of 50 percent towards the land cost provided fulfillment of Guidelines.
- Advanced software training institutes.
- Proposal to set up Global Institute of Electronic Governance and Business.
- Creation of an Electronic Government.
- Creation of state wide Value Added Communication Network.
- Earth station for satellite connectivity to be established.

SIKKIM

- Content development and IT Enabling Services as thrust area.
- Electronic governance and IT for education.
- Plan to network and connect state capital with all sub-divisions.

TAMIL NADU

- High Powered IT Task Force set up under the Chief Minister.
- TIDEL: State-of-the-art infrastructural facilities being built in the heart of Chennai with more than 100 000 sq mtr. area. Information Technology Parks also planned at Trichy and Madurai.
- Apart from existing engineering colleges and IIT - a separate government + industry run Indian Institute of Information Technology (IIIT) - TANITEC being set up.
- Internet community centre being set up in all major cities, towns and villages.
- Massive computerisation drive in Government.

UTTAR PRADESH

- Presence of many centres of Excellence of IT Education including IIT at Kanpur and IIIT being established at Allahabad.
- Software Technology Park (STP) at Noida, which is in close proximity to Delhi and also STP at Kanpur. Plans to set up more STPs at Agra, Varanasi, Allahabad, Dehradun, Lucknow.
- State Government's vision to make Uttar Pradesh a 'Smart state' by 2008-09.
- Priority in allotment of land, power, working capital etc., by state agencies for IT industry.
- Special IT Advisory Board. The IT Action Plan envisages spending of US$ 6 billion in next five years, with 40% to be spent by Central and State government and rest by private sector.
- To link up State Headquarters with districts, sub-divisions and villages through information superhighway.

WEST BENGAL

- Calcutta to house 400 acres of IT INFO HABITAT - a state-of-the-art infocity.
- Presence of major international and domestic players amongst others at Salt Lake Electronics Complex. WEBEL acts as a single window state agency.
- 'Infinity - The Intelligent City' which would include 300 000 sq ft of wired state-of-the-art IT accommodation.
- Establishment of a state venture capital fund.
- Presence of IIT and yet another dedicated institute for IT education and research being set up.

NDIAN SOFTWARE COMPANIES by Krishna Guha in Mumbai

Euphoria gives way to hard-headed assessment

\s they move into increasingly complex ınd demanding areas, many businesses vill have to develop more sophisticated nanagement skills

me of the best performing usiness sectors in the world as just hit a pocket of turulence. After rising seven mes in value from the end f 1996 to mid-1998, India's ading software companies ave fallen back by about 20 er cent.

This was despite excellent rst half results. The big oftware houses reported rofits up by about 85 per ent on revenues 50 per cent igher. Some doubled profits ear-on-year.

There are a number of reaons for this. The spectacur rise in share prices earer discounted much of the icrease in profits.

Second quarter figures, set gainst a strong quarter last ear, were not quite as npressive as some had oped. Foreign investors ook the opportunity to book rofits, often to offset losses in other sectors and other Asian markets.

Meanwhile, the late summer fall in US high technology stocks listed on the Nasdaq exchange, a global benchmark for software shares, left Indian companies looking expensive.

Some investors sold software worldwide on fears of looming recession in North America, the biggest market for software exports. The correction did little more than blow away the froth around the sector. But it has had a sobering effect.

The initial euphoria is over, says Kislay Kanth, an analyst at DSP Merrill Lynch. "Everyone agrees that India's software companies still enjoy real competitive advantages," he says.

The debate is about whether, after rising seven times in value, the sector is now fully priced. Leading Indian software companies trade at about 20 times next year's earnings, a hefty premium to the Indian market average of about 11 times future earnings.

"The price-earnings multiple for some companies is pretty high," says Alroy Lobo, an analyst at Kotak Securities. "That premium assumes strong outperformance. Other conventional multiples, like price to book value, also look stretched."

However, some analysts favour an alternative yardstick, price-earnings against growth, to take full account of software's faster growth rates. On this basis, software stocks look good value.

Investors are paying 20 times forward earnings for medium term growth rates of between 40 and 60 per cent, a P/E to growth ratio of 0.5 to 0.3, less than half the market average.

The result of this calculation is that software stocks which appear expensive today may look cheap in a year or two's time. At this point, the sector may resume its upward march.

On both sides of the debate, analysts distinguish between an emerging super-league of big exporters and those companies which aspire to join them.

The top companies – including Tata Consulting Services, Wipro, HCL Consulting, Pentafour, NIIT, Infosys, Satyam and Tata Infotech – have established a presence in overseas markets, possess strong order books and are accumulating intellectual capital.

The biggest, TCS, is a global company in the making. However, it is privately held, a division of Tata Sons, the holding company of India's giant Tata group.

While periodic rumours suggest the group may one day opt for a public listing, there is no evidence that this will come soon.

TCS, Wipro, HCL and Infosys have made big strides in mainstream software solutions, developing expertise in client industries such as banking or retail.

Infosys and TCS have also made a little headway in selling software products. Others have developed niche markets. NIIT, for instance, is a world leader in education software and web-based learning. Pentafour earns half its revenues from digital animation, mostly for Hollywood entertainment companies.

Satyam has set up specialist Internet-based subsidiaries, and plans to act as an internet service provider nationwide.

These are solid companies with good prospects. The most ambitions, including Infosys and NIIT, plan to list in the US as soon as market conditions allow.

With greater ambitions come new risks. Many analysts feel a US listing could be a bridge too far and turn pale when told of plans for overseas acquisitions.

At the very least, greater complexity will put a premium on management skills, in many cases untested, they say. Both in regard to potential and downside risk there is a strong case for saying these companies should be treated differently from the rest of the sector.

Setting aside unlisted companies and joint ventures such as IBM Global Solutions or Mahindra British Telecom, most of the remaining companies are fast growing but near the bottom of the value chain.

Most depend on basic systems conversion work, in particular the Y2K problem, for a larger chunk of their business than the big companies. This offers low margins.

At the lower end, software is more like a commodity business, says Mr Kanth. Companies have to market themselves on man-hour rates. Year 2000-compliance work will soon disappear, but fortunately there will be another big batch of conversion work as Europe adopts the new single currency.

However, what happens after the euro?

A lot of companies now growing at impressive rates may burn out. The best medium-sized companies may capitalise on their expertise and business relationships to graduate to more sophisticated business of the kind that India's top companies do today.

The reward for spotting winners within this investment universe will be huge. Valuations are relatively cheap and could jump if a company graduated to the big time.

The potential for these companies to outperform is much greater in the future,says Mr Lobo.

There is scope for faster earnings growth and price-earnings expansion.

This is venture capital-style investing, high risk and high return. Even if investors spot a promising company, it may not have a solid track record and its shares may be too illiquid to trade.

Spectacular market returns for the bigger companies could be a thing of the past. Few analysts believe the sector can double or triple in value again in a matter of months, as it did before.

But the big software companies are here to stay and will remain core holdings for portfolio investors. For proof, it is necessary to look no further than the revised market indices published by the Bombay Stock Exchange and Morgan Stanley Capital International. Both for the first time include software.

Moreover, if the rupee begins to weaken again or signs of domestic recovery remain elusive, dollar-earning software could swiftly return to fashion.


V.Chandrasekaran, president of Wipro Infotech: expresses confidence in the industry's future


Rahul Kanodia, joint managing director of Datamatics: one of India's leading software exporters

Pictures: Paul Taylor

INTERNET ACCESS
By Amy Louise Kazmin in New Delhi

Moving forward slowly

Conditions for Internet access in India are now more liberal than expected, but companies still expect problems

India's cyber-community waited for a year for the government to implement a cabinet decision to allow private Internet service providers, ending the monopoly of the state-owned phone company, VSNL, over access to the net.

The wait proved worthwhile. In early November, Indian officials released details of a new policy that will throw open Internet access to free-wheeling competition and lead to the quick proliferation of Internet service providers around the country.

The conditions that will apply to private ISPs are far more liberal and investment-friendly than envisioned earlier.

"Looking at it from where we were, we have come a very long way," says Alok Sinha, business manager for Internet services for IBM Global Services India.

The policy approved, but never implemented, last year would have relegated private ISPs to being little more than "retail sellers" of the government's Internet services, barred from investing in infrastructure and forced to go through VSNL's international gateway to the web.

No more. Officials have decided that private Internet service providers can interconnect with each other, use any existing infrastructure to set up their domestic networks and even provide "last-mile links" direct from their servers to corporate clients or large volume users.

They will also be allowed to set up their own international gateways for Internet traffic in the first competitive challenge to VSNL's monopoly over international calling.

All told, says Mr Sinha, it is now theoretically possible for an ISP "to set up his own network without having to depend for a single meter on the Department of Telecommunications or VSNL".

Though it may take a while, he is confident that such networks will exist. "Even now, the sector is abuzz with activity," he says.

The policy has also thrown open the market to any number of competitors – as long as they are Indian companies with less than 49 per cent foreign equity and can put up a bank guarantee for a prescribed amount.

So far, around 50 companies have applied for the virtually free 15-year licences to set up either on a national level, regionally, or in individual cities.

"This is a revolution – a real entry of India into the information age," says Dewang Mehta, executive director of the National Association of Software and Service Companies (Nasscom).

At present, local dial-up access to the Internet through VSNL is available in just 35 of India's thousands of cities and towns, which forced potential users elsewhere to make costly long-distance calls to reach the net.

But with the new policy, says Mr Mehta, "ISPs will be spreading everywhere". As they do, India's net surfing population is projected to grow from around 500,000 to an estimated 2.5m within four years.

While computer professionals revel in the policy, cynical telecom company executives, who have had bitter experiences dealing with India's entrenched telecom bureaucracy, are less enthusiastic.

While the policy appears liberal, they say that ambiguities in the license agreements leave plenty of room for the Department of Telecommunications to wreak havoc with investors' plans.

"The devil is the detail," says a senior executive for global telecom company planning to invest "really, really cautiously" in India's Internet sector.

He says companies providing other telecoms services, such as cellular phones, have already learnt that the department has a way of zapping firms with unexpected costs and otherwise protecting their vested interests.

So as he lays out his plans, he is busy trying to discover "what bomb are they going to throw at us? What is not written in the licence agreement that is going to destroy the profitability of this business?"

Take the international gateway. While the licence

Turn to facing page

Datamatics software office in Mumbai has a dedicated data link to AT&T in the US

PROMOTING EXPANSION by Dewang Mehta

Sowing the seeds for future development

By moving swiftly to remove obstacles to growth and ensure wide access to the Internet, the government aims to help the IT sector into a new growth phase

This summer marked an important stage in the development of India's IT industry. Never before had the sector gained such extensive press coverage.

In the six months to November, not only were the seeds for the next stage of IT growth sown, but the quick implementation and follow-up also showed that the new government means business.

The latest IT drive is the brainchild of the new National Taskforce on Information Technology and Software Development. This IT Taskforce was constituted last May by Atal Behari Vajpayee, the Prime Minister, who gave it five major assignments.

The first, to be completed in 30 days, required the identification of bottlenecks in the way of India's IT development and the recommendation of measures to remove them. The second was the formulation of a draft of the national IT policy with the aim of enabling India to emerge as a leading force in IT over the next decade.

The third was to create an IT vision statement and awareness programme, the fourth being to set up a virtual vision group of eminent international and global leaders. The final assignment was to recommend a mechanism for monitoring and implementing the IT taskforce's recommendations.

The taskforce is headed by Jaswant Singh, the deputy chairman of the planning commission and a close associate of the Prime Minister.

Other members include politicians, senior bureaucrats and industry representatives. The term of the taskforce is currently intended to expire at the end of this year.

It submitted its first report – the IT action plan for the Prime Minister – in early July. This concentrated on the removal of bottlenecks in the IT industry and promotional recommendations.

Such ideas as providing Internet access through public telephone booths and cable television caught people's imagination. The 108 recommendations of the taskforce were accepted fully by the government in July and even notified as law.

Yashwant Sinha, the finance minister, added to the positive spirit by announcing a wide ranging package of incentives for the software-driven IT sector.

He quickly implemented many of the finance-related recommendations of the taskforce. Never before had any government in India given so much assistance at once to the software sector. One expert said: "It was like Santa Claus in the form of the finance minister giving goodies to the software sector."

The minister's package had a far-reaching effect on the software industry, as well as on the public. The government announced zero import duties on all kinds of IT software.

The government also extended a 100 per cent income tax exemption on profits derived from the export of IT enabling services. According to a conservative estimate by India's National Association of Software and Service Companies (Nasscom), such activities as medical transcription, data processing, revenue accounting, call centres and other services alone could yield cumulative exports of more than $15bn in the next five years and create 1m new jobs.

A technician at Tata Elexsi, Bangalore, repairs a computer board

Another issue addressed by the taskforce was that of increasing IT penetration in the country and reducing retail prices. It thus recommended the elimination of duty on IT components and the enforcement of a high rate of depreciation on computers and peripherals.

The depreciation allowance on computers was raised from 25 per cent to 60 per cent. This means that most of the cost of the computer can be written off in the first two years.

This alone is expected to boost PC sales by 10-12 per cent or more. But more importantly, it would allow leasing companies to provide computers at more attractive rates to the consumer.

One of the most important recommendations of the taskforce, which is being implemented quickly, is the introduction of the definition of "sweat equity" in Indian company law. For the Indian software industry to become more oriented towards creating products and packages, a environment favourable to venture capital must be created.

Apart from working to create this, the government is also setting up four major venture capital funds with a minimum capital of Rs500m (£8m) each.

The government also saw the need for more mergers and acquisitions in the software industry. Therefore, it has streamlined the process for Indian companies to makeforeign acquisitions.

Among the major areas of importance for the taskforce are the Internet and telecoms. A revision of telecoms policy is likely, as the taskforce is making its final recommendations to the Prime Minister this month.

But in the meantime, based on the recommendations of the taskforce's first report, the government ended the monopoly of the state owned VSNL on providing international gateways for Internet access.

The government also allowed free permission for last-mile linkages by either fibre optic or radio communication for IT application enterprises. Moreover, the government has also decided to set up a high speed national telecoms backbone at a cost of Rs2,000m and to make it fully operational by 2000.

However, one of the most far-reaching recommendations of the taskforce is the "Operation Knowledge Campaign". This is aimed at putting IT education and IT-based education on a nationwide basis. The Prime Minister has announced a scheme under which a package consisting of PCs and educational software would be available for just Rs25,000 for students, teachers and schools.

Also, the government is setting up an educational network called IUNET to link all engineering colleges, universities and medical colleges before 2000. It has launched an ambitious project to provide Internet acces and PCs in every secondary school and college by 2003. This would involve more than 100,000 schools.

One of the unique programmes introduced by the government under the taskforce is to boost IT in rural areas. A pilot project has been introduced to network villages in the Warana Nagar Cooperative Complex in the state of Maharashtra. Also, to revitalise education in the Hindi-speaking northern belt of India, new schemes have been floated such as the development of the city of Allahabad as a centre of excellence for IT.

The IT Taskforce has also recommended a raft of measures to maximise the use of IT in government. These involve: each ministry or government department earmarking 1-3 per cent of its budget for IT; a fund of Rs7,000m to tackle the Y2K problem in computers in government organisations; and IT literacy being made an essential requirement for all future government and public sector employment.

Recently, the taskforce gave its second report to the Prime Minister. It suggested a series of recommendations to provide an impetus to hardware manufacturing, with the intention of making industry strong enough to meet the demands of a zero duty regime by 2003.

This report has proposed a new scheme known as Soft Bonded IT Unit (S-BIT) scheme. This is aimed at the integration of local and export production to maximise economies of scale by easing controls.

The speed with which the taskforce has acted, and also motivated the government to move fast, is virtually unprecedented in modern India.

One analyst in California said it seemed that the Prime Minister had not only used a big vacuum cleaner to sweep up all obstacles, but had also created a new IT vision for the country.

The IT Taskforce is now completing its final report, which is expected to be visionary. It has already set an annual target of $50bn of software exports in 2008. Industry observers believe this is achievable, especially since past obstacles have been removed.

Bill Gates, the Microsoft billionaire, recently set up an research and development centre at Hyderabad, the emerging Silicon Valley of India. He said: "India has all the prerequisites to be a software superpower". India is determined to achieve this status.

□ *The writer, Dewang Mehta, is executive director of the India's National Association of Software and Service Companies, Nasscom.*

INTERNET ACCESS

Telecoms links remain a problem

From facing page

says that Internet service providers will be allowed to set up their own gateways after obtaining "security clearance", telecoms officials have verbally stated that companies will not be allowed to re-sell spare gateway capacity.

That means smaller ISPs, which lack the resources or the need to set up their own gateway, may be required to go through the VSNL gateway rather than choose from all available options.

And companies with gateways may not be able to compete with VSNL for other business – something other telecom companies say is crucial for viability.

The ill-defined "security clearance" could also be used to delay the establishment of gateways by VSNL's rivals. "What's the process? Who will do it? How long will it take?" asks Ananda Palwai, chief executive of Wipro Communications, an existing e-mail service provider which plans to offer Internet access. "It could be a major deterrent."

India's still weak basic telecoms infrastructure will be another problem, especially at first. Private basic telecoms service providers are still available in only a handful of cities and many others, including the capital, Delhi, suffer from a chronic shortage of phone lines.

Lines that are available are often of poor quality with plenty of static. That means potential ISPs may find it tough to get the lines they need so that customers can dial in.

"That will be the major constraint," says one telecoms executive. Still, as Internet services proliferate, some analysts say it will unleash an uncontrollable force that will find innovative technical solutions to any shortcomings in the policy or its implementation.

Says IBM's Mr Sinha: "It is like an unwound coil. The minute you unloosen one screw, it is bound to extend to the fullest extent beyond any rules and regulations."

(Additional reporting by Mark Nicholson.)

REGIONAL FOCUS
SALTEC, CALCUTTA

Good news for West Bengal

More cities are joining the country's drive to become a significant force in the sector, reports Kunal Bose in Calcutta

What Texas Instruments did for Bangalore, the south Indian city which has come to be known as the country's Silicon Valley, Computer Associates of the US is going to do for Calcutta's Salt Lake Electronics Complex (Saltec).

Bangalore stole a march over other Indian cities in the information technology sector after Texas Instruments established an export-oriented software unit there as early as 1984.

That was the first such venture in the country. The stamp of approval from Texas Instruments made Bangalore the natural destination for many foreign and domestic software units.

Crowds throng around Calcutta's famous Howrah Bridge

Now, an official of Bengal Chamber of Commerce says: "CA opening its shop at Saltec in March last put Calcutta [West Bengal's capital city] on the country's IT map."

Webel, the West Bengal government agency for IT sector promotion the IT sector, says: "The quick consolidation of business here by CA and its ambitious plans for the Saltec unit are noticed by future investors."

CA's Saltec unit is a joint venture with the Chatterjee Group, an associate of Soros Fund Management. Yet another big nameplate that Saltec boasts is PricewaterhouseCoopers.

"We are very happy with the quality of intellectual capital available in Calcutta," says Sanjay Kumar, president of Computer Associates.

"We have so far recruited 150 people for writing softwere and the team is being expended. The joint venture, CATS, has nothing to complain about in the infrastructure at Saltec.

"We will be investing $100m in India in less than five years and there is no doubt that Calcutta will claim a major portion of that investment."

Purnendu Chatterjee, chairman of Chatterjee Group, says: "The principal reason why we chose Calcutta for CATS is the availability of excellent human resources.

"And, since the software industry has begun to grow here recently, it will be easy for us to retain talents. We will not have to contend with high turnover of manpower as is the case with companies operating out of Bangalore.

"My wholly owned TCG Software, which employs more than 100 software writers, is also at Saltec precisely for the same reason."

While the presence of CATS and PricewaterhouseCoopers is Saltec's strongest selling point, Bhubaneswar, the capital of eastern Indian state Orissa, will be looked at seriously by prospective investors following the opening of software development centres by Infosys and Satyam, India's two highly successful software groups.

According to the Information Technology Association of Orissa, the state's recently announced IT policy and the steps taken to make Bhubaneswar one of India's leading software cities have been noticed by IBM and Microsoft.

J. B. Patnaik, chief minister of Orissa, admits that "some states are far ahead of us in IT business. We cannot be equal to them overnight."

The state entered the IT sectoronly in the middle of 1996 and is working hard to make up for the lost time. The Orissa Industrial Infrastructure Development Corporation is to build a software technology park over 200 acres and a multi-storied software complex in partnership with a private investor.

It says the electronics zone of the export promotion industrial park, which will be close to Bhubaneswar, will be the "ideal location for hardware and software manufacturing units".

Orissa is aware that where Calcutta scores over Bhubaneswar is in the supply of high quality human resources.

The state is taking steps to overcome this problem by creating the Indian Institute of Information Technology. It is negotiating with a US university for the opening of an offshore software training campus in Bhubaneswar.

"We want to create IT awareness among students at school level and the colleges in the state will offer graduation courses in computer science," says a government official. "It will be a different scene altogether in five years."

Orissa is not depending on big names alone for heralding the growth of software industry. "New entrepreneurs with good ideas and skills but without adequate money will have an important role to play in the IT sector," says an industry official.

"A state sponsored venture capital fund with an initial Rs150m ($3.56m) is being created to support new entrepreneurs."

Roopen Roy, director of PricewaterhouseCoopers in India, says: "Webel needs to be restructured. It should be split into two separate companies, one to develop and maintain software park infrastructure services and the other to run a venture capital fund. Ideally, both the companies should have partners from the private sector."

Companies such as Intel and CA think India has the capacity to become "world leader in value-added software" and have decided to play the role of venture capitalist.

The challenge for West Bengal and Orissa will be to create the environment for new small software ventures to grow. Mr Chatterjee says the Marxist government in West Bengal jumped on to the IT bandwagon as it discovered the "tremendous job creating potential of the sector".

"But for West Bengal to gain leadership status in software development, it is essential to create a ministry of information and technology under a dynamic technology-savvy minister," he says.

"That will send the message about the government's intent and focus."

PAPERLESS SHARE SYSTEM by Krishna Guha

Electronic market brings sizeable efficiency gains

Investors are shedding their initial reluctance to give up traditional ways of dealing in securities, now that the advantages have gradually become clear

When India decided to set up a paperless share depository two years ago, a crucial step in efforts to modernise its financial markets, Tata Consulting Services was well positioned to bid for the systems contract.

India's biggest software house had already completed a similar project in Switzerland, where it designed the software for the Sega electronic share depository.

Sega was a three-to-four-year project, with multiple deliverables and multi-systems, both back- and front-end, says S. Ramadorai, managing director of TCS. "It gave us the confidence to bid for these projects on a global scale."

However, TCS was not an automatic choice for the Indian contract. The fledgling National Securities Depository put out an open tender, inviting international companies to bid for the contract. TCS won against stiff competition from companies including Digital Equipment and IBM.

The fact that TCS was Indian was the icing on the cake. But it was not the driving factor, says Chandrashekar Bhave, managing director of the depository.

"We came to the conclusion that the best way to go forward was to buy ready-made, and we found the Swiss depository had the closest software to what we would need," he said.

The project brief had three basic components – the central depository system, the front-end system to be used by brokers and banks and the network used to connect them.

Dealers in Mumbai: new IT systems have strongly increased efficiency in stock market operations

The stock exchange, Mumbai: a paperless market

Early on, the depository decided to piggy-back on the satellite terminal network recently set up by the *National Stock Exchange* for its trading systems to avoid duplicating equipment.

"We wanted to be operational fast," says Rajesh Doshi, executive director at the depository responsible for systems.

"We wanted a proven solution which could be adapted to Indian conditions, scaleable so it could be expanded, and reliable."

The depository decided to take responsibility for commissioning all the front-end user software to ensure the market was ready to use the depository when it arrived. This would also keep the user cost down by spreading development expenses widely.

"We said we would give them a solution but they needed to pay for it," says Mr Doshi. So it had to be affordable for participants ranging from Citibank to a very small broker.

TCS proposed a solution based on a central IBM mainframe, but using a Windows NT-Sequel server system to link up with brokers rather than the IBM OS/2 system used by the Swiss depository.

"We changed the front-end piece," says Mr Ramadorai. He adds that the Indian arrangement was technologically superior and had greater functionality. It was also cheaper.

He says basing the Indian software on the existing Swiss solution helped to cut development cost and time. In the end roughly 70 per cent of the software was reusable.

This reflected the common core function. The underlying depository stores dematerialised information, says Mr Ramadorai. "It is purely a repository of all the information you want to store."

However, TCS had to redevelop about 30 per cent of the code. This section dealt with the way transactions take place, the regulations that apply, the type of participants in the market and the way stock is added and subtracted and fees are levied.

One big difference related to the fact that small investors play a much more active role in India's stock markets than in Switzerland.

Small traders and small investors account for about 85 per cent of transactions, says Mr Bhave. By value it is probably 40 per cent retail. But, for the computer, entry value is immaterial – it is the number of entries that counts.

Thus India's depository had to be prepared for a much higher volume of much smaller transactions. At the peak, about 150 TCS programmers worked on the depository project and the basic system was operational in six months at a cost of about Rs400m ($10m).

The bulk of the cost was hardware. Software cost about Rs100m. Participating brokers paid Rs300,000 each recouping part, but not all, of the development cost.

The depository went live in November, 1996. Its systems worked. TCS remained actively involved and the depository later added more sophisticated functions.

But for a year, it struggled to win business as investors declined to swap easily traded paper shares for paperless transactions, for which there was little demand. It took a big education campaign and intervention by India's market regulator to set the ball rolling.

At the start of this year, the Securities and Exchange Board began to force institutions to use paperless shares to trade in popular stocks.

This finally triggered a rush to join. Investors signed up and began swapping share certificates for paperless shares. There are 100,000 accounts so far, with a volume of $4bn to date and rising daily.

Continual need for fine-tuning

The sharp increase brought teething troubles. "Whenever we have encountered problems these have been of volumes," says Mr Bhave. "You need constant fine-tuning of systems. A system is tested for a certain volume. If the volume goes beyond that, there may be problems."

However, bankers and brokers, a notoriously demanding group, have few complaints. The depository is now accepted as a secure and efficient system for settling institutional deals and retail investors are catching on.

Mr Bhave says the application of information technology has brought big efficiency gains for the Indian stock market. Custody and transaction costs have been reduced sharply.

Buyers also benefit from stamp duty exemption. Brokers profit from a fall in processing costs and instant transfer, which reduces their need to finance trades with bridging loans.

The paperless market is cleaner and more secure than the paper market with its many forged and disputed certificates.

For TCS, the National Depository involvement proved the importance of building teams with industry experience and management skills as well as programming expertise in order to deliver a complex contract cheaply and on time.

"It is certainly a showpiece," says Mr Ramadorai. Since building India's depository, the company has won contracts to design the software for new electronic depositories in Malaysia and South Africa.

CASE STUDY
REDIFF OF MUMBAI

Gateway to a vast array of online resources

The newcomer has already become the country's most visited web site

Intel, the world's largest semiconductor manufacturer, has been notably absent from the list of US technology companies, including other chipmakers such as Texas Instruments and Motorola, that have set up software development or design operations in India.

But, during a recent visit to India, Craig Barrett, Intel's new chief executive, agreed to make the group's first direct investment in India – a small minority stake of about 10 per cent in a Mumbai (Bombay)-based internet content start-up that plans to become India's premier "portal" site.

Rediff was set-up two-and-a-half years ago by Ajit Balakrishnan.

"We want to be the ultimate portal site for Indians in India and overseas," says Mr Balakrishnan, who has assembled a team, including 15 journalists, to help turn his ambitions into reality.

The portal site, which has already become India's most visited web site with more than 650,000 visitors a month, provides its own news service, a free e-mail service and a home page creation service which enables users to construct their own web homepages without technical assistance.

Founder Ajit Balakrishnan says: 'We want to be the ultimate portal site for Indians in India – and overseas'

Other services include an online job listing service which now lists more than 2,000 vacancies daily and which allows online applications. It also provides a gateway to the vast information resources now available on the web about India and is pioneering consumer e-commerce with an expanding range of transactional services.

These include an electronic music store featuring 40,000 titles, a bookshop with 100,000 titles, a Divali (Hindu Festival of Light) gift shop, film reviews and Bombay theatre booking service and online travel agency enabling visitors to choose and book hotels in India online.

"We want to build a scalable model based on both advertising and transaction revenues," says Mr Balakrishnan. So far, the site, built using IBM's Net.Commerce software running on Intel-based Pentium II servers, has 25 advertisers. He reckons 20 per cent of Indians overseas already log into the site. "Our goal is to have a 40 per cent share," he adds.

Paul Taylor

India's IT mantra

From page 1:

large pool of relatively low-cost, technically qualified and English-speaking software professionals that has underpinned its success.

An entry-level software programmer recruited by one of India's top domestic software companies can expect to earn about $500 a month to start with, rising to about $1,000 after three years and $2,000 a month after six years.

As competition grows for the best graduates and engineers with experience, wages are rising rapidly and attrition rates have soared.

"India is facing a severe shortage of expertise and companies are struggling to keep people," says Rahul Kanodia, of Datamatics. "The biggest problem is at the project manager level."

"Wages have been rising at about 25 per cent a year for the past five years," says N. R. Narayana Murthy, Infosys' chief executive. On that basis the cost advantage enjoyed by Indian companies in the $750bn-a-year global software market will erode quickly. Offsetting this wage inflation, Nasscom calculates that productivity is also rising rapidly, from about $21,000 an engineer in 1992 to $45,000 by 1996. As a result India is still very cost-competitive.

But most leading Indian software companies recognise that cost is not a sustainable strategic advantage. Instead, they have developed strategies which they believe will enable them to build their brands and move up the value ladder, either by delivering high quality customised services and consulting or by developing branded products for the global market.

Both strategies have their advantages and dangers. Most leading Indian software companies have already forged strong partnerships with their overseas partners and have shifted work offshore as the confidence of the customers has grown.

As a result the proportion of work undertaken for clients on-site has fallen from more than 90 per cent at the start of the decade to less than 60 per cent today.

Although on the face of it, India's share of the overall world software market appears tiny, some analysts including those at First Global in Bombay, suggest that India's share of its real target market – support and maintenance and a small element of systems integration and application development – is actually around 5.5 per cent and will rise to about 11 per cent by the end of the decade.

This, coupled with a downturn in year 2000 work, could result in slowing growth, they suggest.

If this turns out to be true it is likely that it will be the smaller and medium-sized companies that are most dependent on basic computer services which will be hardest hit.

In contrast, some of the top tier companies are investing heavily in research and development and in particular in building software packages – especially in the banking, enterprise resource planning area – or developing software modules and components for use in other's packages.

"This is a high risk, high reward strategy," says R. Ravisankar, Citicorp Information Technology Industries' chief executive. "You cannot go half way."

FINANCIAL TIMES SURVEY http://www.FT.com

INFORMATION TECHNOLOGY

WEDNESDAY DECEMBER 2 1998 Monthly series, next issue January 6, 1999

Doomsters have been having a field day with their grim warnings about what could happen when computer clocks switch to 2000 – but some of their forecasts have already started to come true.

Many companies are experiencing year 2000 (Y2K) software-related failures and quietly dealing with the consequences. This trend will gather pace, even though the new millennium is still more than a year away.

While much has been discussed about the potential consequences of hundreds of millions of computer clocks turning over to the 2000 date and triggering software failures, the fact is that Y2K failures are already becoming increasingly common.

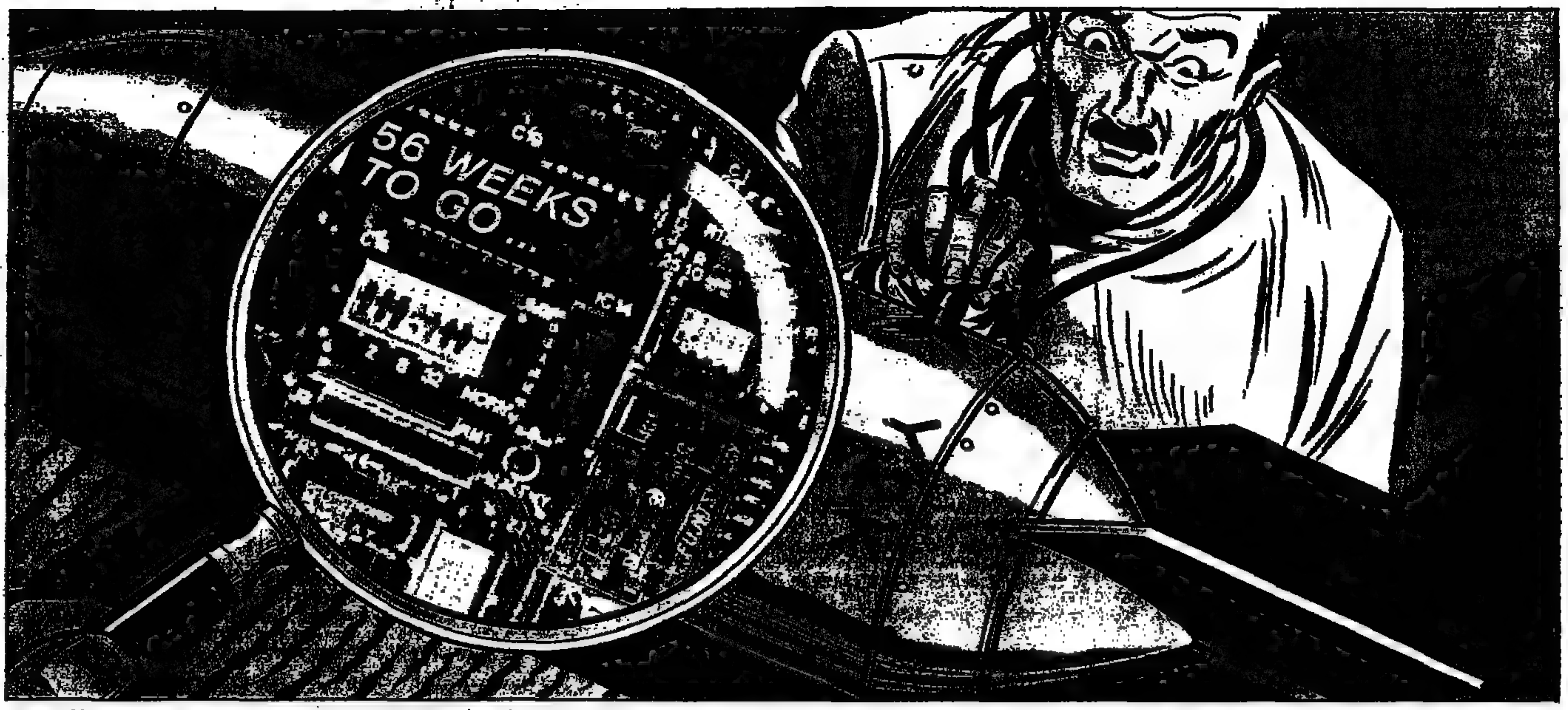
The problem is straining information technology budgets and delaying the development of key business opportunities.

A survey by the Information Technology Association of America, a trade organisation, found earlier this year that 44 per cent of around 450 companies surveyed had already experienced Y2K-related failures in IT systems dealing with their day-to-day operations.

A further 57 per cent reported Y2K failures in IT systems under test conditions, demonstrating that fixing the software usually introduces new bugs that can only be discovered by comprehensive testing.

Y2K failures have not generally stopped businesses in their tracks, but awkward upsets have occurred.

"There have already been some high-profile Y2K system failures but companies don't want to admit they've had problems," says Ed Yourdon, chairman and co-founder of the Cutter Consortium, an IT consultancy in the US, and a leading expert on Y2K and IT issues. "We will see more of these types of failures over the next year."



Many outside the IT profession have been hoping a 'silver bullet' will be developed that would easily fix Y2K problems, but IT professionals know such a thing is impossible

Illustration: Mark Thomas

Millennium 'bomb' is already ticking

The need to ensure that vital systems do not fail in 2000 is holding up other IT work, writes **Tom Foremski**

Trigger for early failures

Such early IT system failures will occur more often as 2000 approaches, simply because IT systems generally look ahead in terms of forecasting sales, orders and other business functions.

Gartner Group, the US IT consultancy, estimates that most user-developed applications will experience a Y2K-related failure by the close of 1998.

The rollover of company and government fiscal years will be another trigger for early Y2K failures. Next spring, the 2000 fiscal years of New York city and several US states, plus the government of Mexico, will begin.

"We will see very public Y2K failures," predicts Mr Yourdon. "Y2K failures during this time will give some indication of what private sector companies can expect."

With time running out, it is already too late for companies to attempt a wide-ranging overhaul of their IT systems.

"It was already too late to make major fixes by the beginning of this year," notes Capers Jones, an internationally respected Y2K authority and chief scientist of Artemis Management Systems of the US.

Mr Jones is recommending that his clients do what they can to implement Y2K solutions while making contingency plans for worst case scenarios.

Fixing older systems is time-consuming, and replacing them with new ones requires at least two years of planning, installation and testing. Yet Gartner estimates that 35 per cent of all US companies have yet to start work on Y2K.

Mr Jones, who advises governments on Y2K issues, says that the US and the UK are ahead of other countries in fixing their computer systems, with the rest of the world far behind.

Some economists, notably Ed Yardeni, chief economist of Deutsche Bank Securities in New York, have warned that Y2K problems have a 70 per cent chance of triggering a global recession.

Mr Jones says that with his best case scenario of 85 per cent of fixes completed in the US and the UK, "it puts us on the cusp of a possible recession".

He had advised the European Union to delay the launch of the euro, arguing that IT departments do not have the resources to tackle two of the most challenging IT projects ever encountered.

"The euro affects about 10 million software applications, but Y2K affects some 36 million software applications worldwide," estimates Mr Jones.

Usually about 15 per cent of IT projects are six months or more behind schedule. With Y2K the most challenging IT project of all time, many companies will not complete their Y2K work in time.

There are tools available for dealing with Y2K problems, but this is still a tedious job. "We have a tool that helps with Y2K but with 900 applications, we still need to go through each application and then test it to make sure there are no problems," notes Nadav Aharonov, systems analyst at the University of San Francisco. "It is a major job."

Many outside the IT profession have been hoping a "silver bullet" will be developed that would easily fix Y2K problems, but IT professionals know such a thing is impossible.

"A silver bullet is impossible to develop. There are hundreds of computer languages and a wide variety of systems," says Kazim Isfahani, industry analyst at Giga Information Group, an IT consultancy in the US.

Even if companies have been diligent and converted all their mission critical applications to be Y2K compliant, there are many other dangers.

Power and telecom services

"If the electric power grid fails, you won't know if you have a Y2K systems failure," says Mr Jones. And with an interlocked economy, a Y2K failure with a company's key supplier will create a significant problem.

There are also systems harbouring Y2K problems that many companies have yet to address. "Telecommunications systems are a potential problem," says Mr Yourdon. "Companies may have addressed their mission critical systems but haven't considered if their PBX is safe."

The extra spending on Y2K means that already hard-pressed IT departments will not be able to devote time to exploiting key business opportunities.

"We have found that most IT departments have stopped development of other IT projects so that they can concentrate on Y2K," says Mr Isfahani. "But electronic commerce projects have not been delayed. Most companies consider it a strategic project."

Mr Yourdon predicts: "By the middle of 1999, you will see IT spending on hardware and software drop considerably because IT departments will want to stabilise their systems and won't want to install new systems until they know they can get through the date change."

Many IT vendors are already warning their shareholders that Y2K work will result in lower sales in 1999. "We think that our sales won't grow as fast in 1999 because of Y2K work within companies," notes Mark Nittler, vice-president of applications at US-based PeopleSoft, which provides software for large corporations.

Apart from the US and the UK, most other countries are way behind in their Y2K projects, either because they have not considered how important the issue is or, in cases such as Russia, there is no money for such work. And, with much of the world in economic recession, the lack of money makes Y2K a low priority.

While some may recoil at the doom and gloom scenarios for Y2K failures, others think it could turn out to be a relatively minor problem. In a 450-page report released earlier this year by Merrill Lynch – *Y2K: Implications for Investors* – the US investment bank's analysts claim that the majority of Y2K work will be completed in time.

"Most companies have been working on their Y2K projects for two years and there are one-and-a half years left," the report says. "Microsoft, Latin America and Communism all changed radically in a lot less time."

The Y2K problem has its roots in the early years of the computer industry when memory and data storage was expensive and required that programmers used two-digit date codes. By the early 1990s, this was no longer an issue, yet programmers continued to use two-digit codes.

"In many large organisations, including the Department of Defense, there were standards that mandated the use of two digit codes," says Mr Jones. "I know of instances of programmers using four-digit date codes who were told to rewrite their software because it did not comply with their organisation's standards."

Mr Yourdon says that although he warned in the early 1970s that two-digit date fields would become a problem, he only began publicising the issue in 1995. "Even in 1995, there was not much of an audience for Y2K issues."

One of the first programmers who tried to draw attention to the problem at an early date was Bill Schoen, a US software expert who has worked for several leading companies. In 1983, he developed the first commercial Y2K tool and spent several frustrating years making presentations to leading companies. Only two corporations bought the tool.

"If companies had begun using four-digit year dates in the early 1980s, you would not have heard about the year 2000 problem," Mr Schoen says.

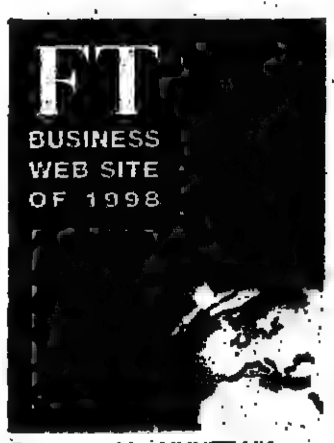
"It would have been a trivial thing to use four-digit dates. It would not have cost anything in terms of labour or computer resources."

Such early preparations would have avoided most of the global cost of dealing with Y2K, estimates for which range from about $600bn from Gartner Group to Mr Jones' figure of $1,340bn. "Companies will effectively have nothing to show for this investment," adds Mr Yourdon.

Mr Schoen is scathing about the IT sector's failure to tackle the problem in good time. "I am *just a simple Cobol programmer*, and I knew about the problem 20 years ago, and so did many other programmers.

"You have to ask the question, why didn't the IT gurus, the major IT systems providers, the IT standards organisations provide the early leadership that recommended that four-digit date codes be used?

"We wouldn't be in this mess if they had."



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■ Competition winners announced today: see full details on page 22

On other pages

Windows faces a fresh challenge from rivals

Microsoft and Oracle look set to do battle for control of the industry, reports **George Black**

Oracle, the world's leading database vendor, is to attempt to challenge the dominance of Microsoft's Windows operating system.

At Comdex, the trade show in Las Vegas, Oracle announced a plan for a new type of server which would run without the need for Windows.

Larry Ellison, Oracle's chief executive, said he had discussed the project, code-named "Raw Iron", with several leading hardware manufacturers, including Compaq, Dell, Hewlett-Packard and Sun Microsystems. He said he was confident that machines of this type would be on the market by March next year.

At the same time, Microsoft is seeking to replace Oracle as the primary supplier of corporate databases. Microsoft's SQL Server version 7.0, launched at Comdex, is claimed to be much better able than its predecessor to support large installations of business software such as SAP's R/3.

Oracle claimed that a new version of its own database (8i) would be substantially cheaper than the SQL Server 7.0 and would compete with Microsoft's Access database in smaller companies.

IT NEWS UPDATE

Mr Ellison and Bill Gates, Microsoft's chief executive, jointly opened Comdex, giving opposing views of the industry's future.

Mr Gates said the PC would "go far beyond what any systems have been able to do in the past," although he conceded that it still needed to be made easier to use.

Mr Ellison returned to his theme that PCs and client/server networks were too expensive and inefficient to maintain their present role.

Two years ago, Mr Ellison predicted that the "network computer" – a cut-down version of the PC, receiving its software mainly from a server across a network – would supplant the traditional PC.

So far, the NC has had only limited success among large user, but some vendors and industry experts are still convinced it will ultimately triumph.

At Comdex, Mr Ellison argued that the Internet would make Windows superfluous over the next couple of years.

The two rival companies are now heading for an intense marketing battle to persuade hardware and software companies to back their differing strategies.

Sun, a leading producer of high-powered workstations, will almost certainly join the Oracle camp, because it is in a legal dispute with Microsoft over the development of the Java language. *See report, below.*

IBM, which has been a prominent backer of the NC concept, is also likely to support Oracle in order to try to loosen Microsoft's grip on the industry.

However, it is doubtful how many others may follow. Hewlett-Packard and Compaq, which now owns Digital, are both now more closely associated with Microsoft.

It will be important to see whether Oracle can convince large users that its model offers a real prospect of achieving a big reduction in the total cost of ownership of information technology.

It is the cost of supporting systems, rather than the purchase price, which has been troubling finance and IT directors in the past few years.

They will need to be persuaded that the chance of substantial cost-savings is worth the massive upheaval and considerable business risk involved in abandoning Windows.

Larry Ellison, chief executive of Oracle, introduces new software at the Oracle Open World conference in San Francisco, last month. The new software, called Oracle8i, is designed to replace 'client/server' computing by allowing consumers and businesses to use the internet to store data at a single, centralised location AP

JAVA DISPUTE

Sun wins a round

Microsoft has been ordered by a court in California to modify its Windows 98 and Internet Explorer products to comply with the terms of its licence to use Sun Microsystems' Java language.

The judge's preliminary injunction demanded that Microsoft stop selling an altered version of Java. US government lawyers say the ruling will help their anti-trust case against Microsoft which is proceeding in a court in Washington.

Microsoft is accused, among other charges, of manipulating Java to prevent it becoming a threat to its Windows operating system. The company says the decision will have little impact on the anti-trust case. In the Washington court, damaging evidence against Microsoft was given by Intel, the chip manufacturer. Steven McGeady, Intel's vice-president of Internet technologies, alleged that Microsoft had repeatedly tried to force his company to close down its software division, making "a credible and fairly terrifying threat" to subvert the launch of the MMX generation of Intel chips in 1995.

According to Intel, Bill Gates, Microsoft's chief executive, told Andy Grove, former chief executive of Intel, to shut down the Intel architecture laboratories which were working on Internet software. An internal Microsoft e-mail of 1996 indicated that Microsoft mistrusted Mr McGeady and considered him an ally of Sun.

The court was told that Microsoft feared Intel would lead a coalition of competitors seeking to enter the operating system market. Microsoft believed that Intel had no right to intrude into the area dominated by Windows, the court heard.

Mr McGeady also testified that Microsoft had detailed plans to "cut off the air supply" to Netscape Communications by giving away its Internet Explorer browser to prevent Netscape becoming established in that market. The alleged abuse of Microsoft's monopoly power to crush Netscape is one of the government's main charges. Mr Gates, in his videotaped evidence, denied threatening Intel or putting pressure on it to stop supporting Netscape.

America Online, the leading Internet service provider, has testified that Microsoft offered "tens of millions of dollars" to do a deal with it rather than with Netscape.

YEAR 2000 COMPUTER-COMPLIANCE

Counting the cost

Companies and public services still face substantial risks from the so-called millenium "bomb", according to new reports by Cap Gemini and Taskforce 2000.

Cap Gemini, the French computing services company, said the cost of conversion had risen by 20 per cent in the past six months as companies found out the scale of the problem. This increased the likelihood that projects would slip behind schedule. The timetable was already very tight for many organisations, with too little time allocated to testing systems, it said.

Smaller companies were at greatest risk and their failure could disrupt whole supply chains. There was a lack of planning to ensure business continuity, especially in Europe, when compared to the US.

Taskforce 2000, the UK government agency, warned that public services could come to a halt because of the millennium date problem.

Most government bodies were doing too little testing, it claimed, thus creating a risk of significant breakdowns.

Several UK government departments are classed as "high risk" by the agency. Some are badly behind schedule and will not have time to complete testing by 2000. It proposed that the government should put more resources into areas most at risk.

Police forces in Britrain are working with the army on contingency plans to cope with emergencies which could result from the year 2000 problem.

Water and electricity supplies could be disrupted, warned United Utilities. Several large US companies have recently admitted serious risks related to year 2000 computer issue.

For detailed reports, see pages 3 to 11.

RESEARCH DIGEST

E-commerce surges ahead

The European market for e-commerce will grow massively, *from $38.5m last year* to $3.07bn in 2004, predicts Frost & Sullivan, the US market research company. It defines e-commerce narrowly as real-time commercial transactions on the Internet, excluding advertising and other sources of revenue. Over the same period, the number of Internet subscribers will shoot up from 9.9m to 44.9m. The Internet market for consumer products is seen likely to become "the fastest growing market in history."

Using a broader definition, Forrester Research, another US market researcher, estimates that Internet-based commerce could reach $3,200bn worldwide by 2003. This would represent nearly 5 per cent of global sales. Its low-end estimate is $1,400bn. The study includes electronic data interchange transactions expected to take place on the Internet.

Applications boom predicted

The applications software market will more than double in the next five years to $48bn, forecasts a new report by International Data Corporation, in contrast to some other analysts' warnings of a slowdown. Some of the fastest growth will come in the telecoms sector, as deregulation, greater competition, mergers and the rise in Internet traffic have an impact. Manufacturing will account for a third of the total software revenue.

UK industry lags on euro

Only 18 per cent of UK manufacturing companies are fully ready for the euro, according to a survey by the Computers In Manufacturing exhibition organisers.

The study, based on 1,700 phone interviews with IT managers in manufacturing companies, found that more than 80 per cent had no written guarantees that their systems could handle the euro. A quarter had taken no action to replace non-compliant systems.

NT the 'platform of choice'

A big majority of information systems executives are planning to use Microsoft's Windows NT as the operat*ing system for their critical* applications, says a survey by EMC, the storage equipment vendor.

Among 850 IT executives in large companies worldwide, 83 per cent will adopt NT as their primary system and most say their volume of data based on NT is already increasing rapidly. But most IT managers admit they lack the tools to manage these systems properly, EMC says.

Big outsourcing rise forseen

UK public sector outsourcing will grow by 66 per cent over the next five years, forecasts the Kable consultancy. The market is dominated by EDS with 32 per cent; Racal is second with 8 per cent.

"Although there are problems with some of the public sector contracts, there is no real sign that these are preventing many more being signed up," says research manager Paul Smith.

Data to overtake voice

Within the next two years the total volume of data carried over the world's telecommunications networks will exceed that of voice, says PriceWaterhouseCoopers in its "Technology Forecast 1999".

As a result, telecommunications operators will need to transform fundamentally their infrastructure, from the circuit-switched networks they have invested in for over 100 years to packet-switched networks designed primarily for data.

UK banks called 'complacent'

The UK's high street banks are complacent about new competitors and are not adopting information technology aggressively enough, says a study by Deloitte Consulting.

It warns that the percentage of customers switching their accounts to other banks will rise sharply as *the costs of doing* so are reduced by new technology.

The banks need to adopt the Internet and online banking to provide a better service, says the consultancy.

THE MONTH IN BRIEF

AOL snaps up Netscape

America Online, the world's largest Internet services provider, is acquiring Netscape Communications, the browser vendor, for $4.2bn in an all-share deal.

AOL and Sun Microsystems have agreed to work together to accelerate the development of Netscape's electronic commerce software business. The news is a serious blow to Microsoft, which currently supplies its browser to AOL on an exclusive basis. Microsoft said the deal would undercut the government's anti-trust case, but government lawyers denied this.

Sun under fire over Java

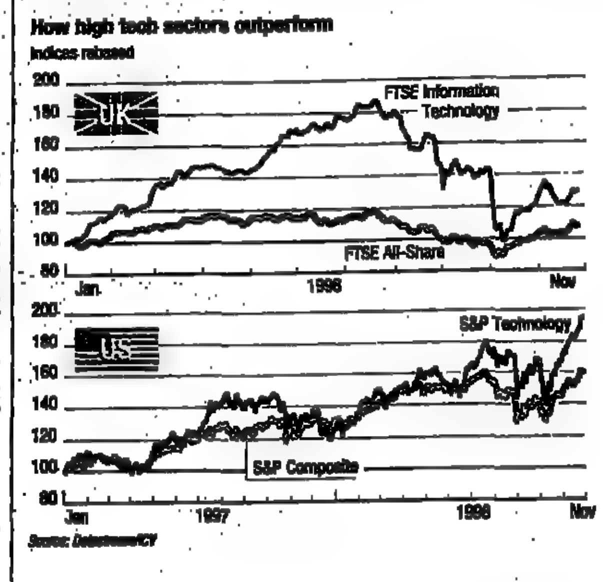
Sun Microsystems is being challenged over its ownership of the Java language. A group of competitors including Microsoft and Hewlett-Packard *say they* will set their own standard for applying the language to programming devices such as mobile phones and printers. Java Lobby, a systems developers' organisation, also wants Sun to collaborate. Sun responded that it could develop Java standards faster than any industry group and threatened competitors with legal action if they broke their contracts for use of the language.

New range from Compaq

Compaq, the world leader in the personal computer market, has announced new machines fitted with modems claimed to be 300 times faster than the current standard. The new PCs will have DSL modems, capable of connecting to the internet at 1.5 megabits per second, rather than the 56K standard connection. Traditionally dedicated to the reseller channel, Compaq intends to start selling heavily direct to customers through the Internet and call centres.

How high tech sectors outperform

Indices rebased



Source: Datastream/ICV

HP improves PC sales

Hewlett-Packard's personal computers and printers sold well in the third quarter. Revenues were up by 4 per cent to $12.2bn, with net profits down by 12 per cent to $710m, but slightly above expectations after special charges of $170m for voluntary redundancies and asset write-offs. The weak markets of Asia and Latin America could continue to affect results in the next year, the company warned. Annual revenues were up by 10 per cent to $47bn, with profit down 6 per cent to $2.9bn.

Rising demand for Intel chips

Intel, the chip manufacturer, has said that its fourth quarter revenues will be above expectations because of rising worldwide demand for personal computers *of all types. It has* revised its forecast upward, from a slight increase in the fourth quarter to betwween 8 and 10 per cent above its third quarter revenue. It also foresees some improvement in the Japanese market. The company is considering building a factory in eastern Europe or the Baltic States.

UK start-up attracts investment

Intel and Cisco, the network equipment maker, have each invested $10m in Bookham Technologies, a UK start-up company which claims a world lead in developing optics on a chip. The new technology is aimed at cutting the cost of telecommunications by doing away with the need for expensive equipment to convert signals from optical fibre lines to signals for copper wires. Bookham is privately owned and at present still making a loss.

Asian boost for Dell

Dell, the personal computer maker, has bucked the overall trend by recording a 49 per cent increase in sales in the *Asia-Pacific* region, including Japan, in the third quarter. Total revenues were up by 51 *per cent to $4.8bn, with net profits* up by 55 per cent to $384m. The results were slightly above most analysts' expectations. Michael Dell, the chief executive, said conditions in the technology sector remained "healthy" and the company was growing at five times the industry average rate.
Winning web sites: see page 22

EDS and IBM win welfare deal

A consortium led by EDS and IBM has won a contract with an estimated value of £7bn to run the UK Social Security Department's computer systems over the next ten years. The group, which also includes Cable *and Wireless and* PricewaterhouseCoopers, has been appointed to undertake the Accord project, operating the department's benefit administration systems. These include mainframes, mid-range and desktop computers.

Microsoft's wireless data venture

A joint venture is being formed by Microsoft with Qualcomm, a developer of wireless communications products. The aim is to develop software to use with a new generation of devices that combine mobile phone and portable computer technology. The partnership could compete with the recently announced joint venture between Psion, Motorola, Nokia and Ericsson.

Baan founder quits board

Jan Baan, founder of the Dutch business software developer, is to leave the board of the company after its shares fell by 80 per cent in the past few months. Management of the company was handed over in July to Tom Tinsley, as chairman. Further non-executive directors are expected to be appointed. Baan is a principal competitor with SAP, Oracle and PeopleSoft.

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SURVEYS PROGRAMME AND INDEX
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□ For details of forthcoming surveys or a list of past surveys, consult the FT Web site:
http//www.FT.com/newspaper/services.htm

The FT Review of Information Technology

This review is published on the first Wednesday of the month. In addition, information technology articles appear regularly in 'Inside Track' in section one of the FT. The IT Appointments section is also published each Wednesday.

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IT GURU'S VIEWPOINT: PETER DE JAGER

Spreading the good news about the year 2000

Companies must show how they have tackled the millennium problem and not be put off by lawyers – or the public may panic, writes **Rod Newing**

Peter de Jager was planning to pass the evening of December 31, 1999, in Dublin, "the best place for music in all of Ireland". Instead, he may spend the night on an aircraft. The reason is the need to spread some good news about the year 2000 problem.

"I am surprisingly pleased by the tremendous progress the US Federal Aviation Authority and the airlines have made," he says. "I intend to work closely with them over the next few months and if they convince me of some things, I will announce that I plan to be flying that night."

Mr de Jager, whose background is in mathematics and computer science, forecast some seven years ago the problems that would occur for computers when 2000 arrived. He has since become a leading guru in this subject. He strongly believes there needs to be some good news about the year 2000 issue.

"Now is the time for companies to say honestly what they have achieved, what they have actually fixed and what remains to be done," he says. "Unless these achievements start becoming widely known, people will assume nothing has been done and there will be justifiable panic."

He is not expecting national electricity or telephone blackouts or that aircraft will be grounded everywhere. However, he does predict localised blackouts and the grounding of aircraft in some locations. He believes we have lost sight of the fact that the year 2000 issue was only ever going to be catastrophic if people did nothing.

"The reality is that, as late as we have started, a tremendous amount of effort has been expended," says Mr de Jager, who has worked as a programmer for banks, insurance companies and retailers, as well as for IBM.

"The CIBC bank in Canada alone has 1,000 working on the problem, which is good news, but at the moment there's no public evidence of the progress made.

"It is time for the lawyers to shut up and get out of the picture. Boards must communicate what they have done by taking advertisements, holding public meetings, talking to the media and generally communicating the good news."

Mr de Jager is frequently asked: "Should I take my money out of the bank?" He says the banks have done a tremendous amount of work which must be communicated to their depositors, otherwise they will be nervous. And if they are nervous, they will take their money out.

Challenged over his use of the emotive word "panic" he says there will be disruptions and he advises people to prepare for the year 2000 in the same rational way Americans prepare for a hurricane or an earthquake.

All organisations must put contingency plans in place so that when unforeseen problems occur, business can continue. Customers and the public need to know they are not going to be affected and will continue to get service.

"It frustrates me immensely that I am now talking about contingency plans," says Mr de Jager. "A contingency plan is something you talk about when you have failed to solve the problem in the first place. Right from the beginning we had an opportunity to solve this problem and we chose not to do it. It is a sad commentary on both management and government!"

Some 80 per cent of small businesses have not yet started to address the year 2000 issue, but that does not worry Mr de Jager. "Twenty-one per cent don't even use a computer and the rest use PC-based packaged software, which is easy to upgrade," he says.

Medium and large companies are different, because they have the problem of embedded chips. Mr de Jager expects embedded systems to cause problems, but believes that the number of failures will be very small. Unfortunately, they will be in areas with a large impact, such as in a chemical plant or on a ship.

Mr de Jager believes that all organisations will drop non-year 2000 projects next year – and that 40 per cent have already done so. Only 25 per cent of existing programmers are on year 2000 tasks and he expects the number to approach 100 per cent by the end of 1999.

"There can be no more new toys until we clean up our room," he says. "The euro could be the worst thing Europe has ever done, not as a comment on the principle, but as a conflicting resource demand to the year 2000. It doesn't matter if it is delayed." At this stage, however, the euro's arrival is imminent.

People are finally beginning to realise how big and how serious the year 2000 problem is and are thus generating the momentum and motivation needed to fix it.

"A tremendous amount of work has been expended and we are making good progress," he says. "We are not going to get everything done, but it will not be the end of the world. Anyone who says that the year 2000 issue will not be a problem for their organisation is ignoring that fact that historically, 80 per cent of projects are delivered late or never."

Many year 2000 managers he meets are displaying cautious optimism. They sound determined, but not too sure of themselves, and so are not complacent. They recognise the consequences of failure, which is a positive sign of a serious attempt at delivering their projects on time.

Mr de Jager believes that if the airline industry can convince him it is safe to fly, he will put an end to a lot of arguments simply by booking his flight.

"If I am confident enough that I will put myself on a plane that evening, then actions will speak louder than words," he says. "We need to communicate good news and I am willing to be part of it if I can."

☐ *Peter de Jager has created The Year 2000 Information Center (http://www.year2000.com) and its associated mailing list.*

The Millennium Bomb – 56 weeks away

People are beginning to realise how big and how serious the year 2000 problem is and are thus generating the momentum and motivation needed to solve it, says Mr De Jager

De Jager: 'It is time for lawyers to shut up and get out of the picture'

Illustration by Tony Healey

IMPACT ON FINANCIAL SERVICES by Geoffrey Nairn

Much work remains to be done

Increasing anxiety among bank customers could be more damaging than the year 2000 problem itself

The good news is that the financial services industry leads all others in preparedness for the millennium date problem – or the Y2K issue, as it is widely known.

The bad news is that much work *still needs to be done* if banks are to shake off the nightmare vision of long queues at the teller machines on the eve of 2000.

The banking industry, more than any other, is built on confidence. Recent events in Russia and other troubled economies have shown that a fall in confidence in the banking sector has customers rushing to withdraw their hard-earned savings.

Many banks are worried that the millennium "bomb" could trigger similar behaviour. The Federal Reserve, the US central bank, takes the fear very seriously and is prepared to pump an additional $50bn in cash into the US economy at the end of 1999 to keep teller machines well stocked or allow nervous investors to liquidate their investments.

Industry experts insist such actions are unwarranted. "We do not recommend that you take [all] your money out of the bank," says Andy Kyte, Y2K analyst at Gartner Group, the IT research concern.

"*The banking industry is* ahead of the curve in its Y2K plans and customers should just keep their normal cash float," adds Peter Lawless, who heads IBM's Y2K initiative in the European financial sector.

The financial sector is traditionally a stronghold for IBM mainframe computers, and the company knows it has a heavy responsibility in helping institutions to achieve Y2K compliance.

As well as making its own hardware and software compliant, it is also helping institutions to test their millions of lines of custom programs, many of which were written long before the Y2K issue was widely known.

But the Y2K issue affects more than just mainframes. Gartner Group knows of one bank with more than 12m lines of PC programs that have to be checked for potential year 2000 problems.

Most are non-critical applications, such as word processors or spreadsheets, but Gartner has found several worrying exceptions, including one bank running its currency trading application on a PC spreadsheet.

IT managers in European institutions have the extra headache of the euro. The Bundesbank, Germany's central bank, recently said that the euro was getting priority treatment in Germany and that had obliged it to set a relatively late deadline of July 1, 1999, for the German financial services industry to complete Y2K preparations.

The competing pressures on IT resources in the European banking sector will come to a head next year and push IT spending by European retail banks to a record $21.7bn, according to Datamonitor, the British consultancy.

Beyond 2000, these levels of investment will not be sustainable, Datamonitor predicts. Spending will thus decline, although not dramatically. The drop in Y2K-specific expenditure will be partly compensated for by greater investment on large-scale integration work as the pace of mergers and acquisitions heats up in European banking.

It was once expected that the Y2K problem would accelerate mergers and acquisitions when weaker banks realised they did not have the resources to fix the problem themselves.

"We know of banks in the US where the Y2K risk was one of the reasons for them merging," says Matthew Hotle, research director at Gartner.

However, the Federal Reserve moved earlier this year to dampen merger mania by warning that banks would not be allowed to merge if their Y2K projects were not well advanced. "We are now seeing a slowdown in mergers and acquisitions because banks are having to take the Y2K issue extremely seriously," says Mr Lawless.

The millennium "bomb" has the potential to affect much more than just banks' cash machines, although this is usually the public's closest encounter with banking technology and malfunctioning teller machines will inevitably feature heavily in media reports on the first day of the new millennium.

"Anything that goes wrong at the beginning of 2000 is going to be blamed on the Y2K bug whether or not its really to blame," says Margaret Joachim, European head of Y2K services for EDS, the IT services company.

The millennium problem could affect the financial services industry in ways that are not easily apparent. Even though the industry has made good progress in ensuring its own systems are year 2000-proof, it could still suffer serious problems if, for example, customers were unable to meet loan payments because their own systems were down.

Analysts fear that widespread problems suffered by borrowers could have a serious impact on lending institutions, resulting in an increased frequency of defaults. Financial institutions thus also need to educate their borrowers about the importance of the Y2K issue.

The financial services industry is secretive by nature but government regulators are mandating banks, exchanges and brokers to meet myriad Y2K requirements and disclose information.

In the US, the Securities and Exchange Commission recently charged 37 brokerage firms for failing to report the status of their Y2K plans.

One of the biggest worries in the industry is containing the "systemic risk" that the Y2K problem potentially poses. The industry operates on a global basis with payment networks and trading systems closely interconnected.

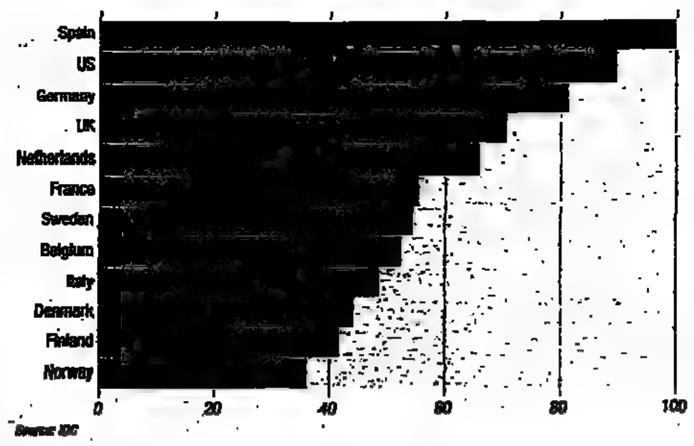
Leading institutions know their well advanced Y2K *plans will count for little if* smaller institutions and less developed countries do not also take action.

To address this issue, 170 members of the global financial community have joined forces in an effort to minimise the worldwide consequences of the date change and created the Global 2000 Co-ordinating Group.

"It is particularly important to co-ordinate Y2K globally," says Mr Lawless. "The problem is not just about IT but involves the whole range of business issues such as self-assessment and contingency planning."

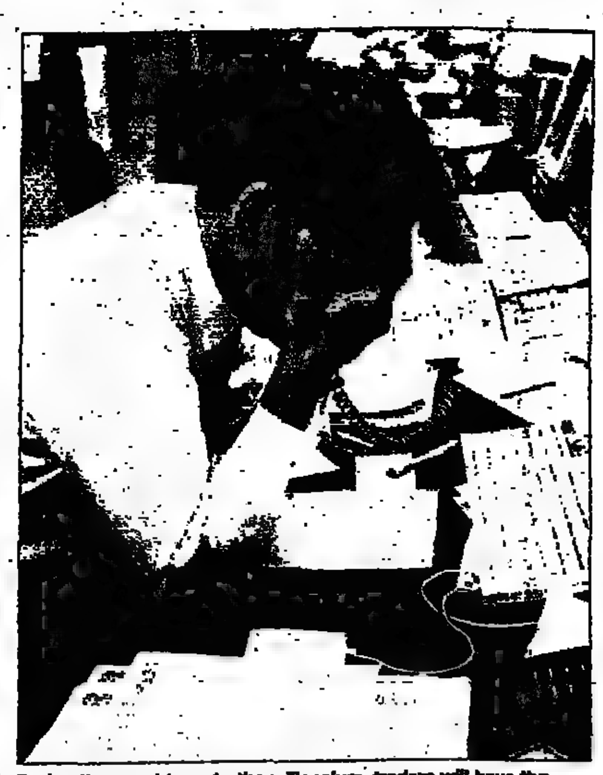
The next six months will be crucial to the financial services industry, not only in completing its Y2K preparations but also in *reassuring consumers and averting* a panic that could be more damaging than the millennium "bomb" itself.

Progress to date: how much has been spent
Year 2000 as % of annual IT spend



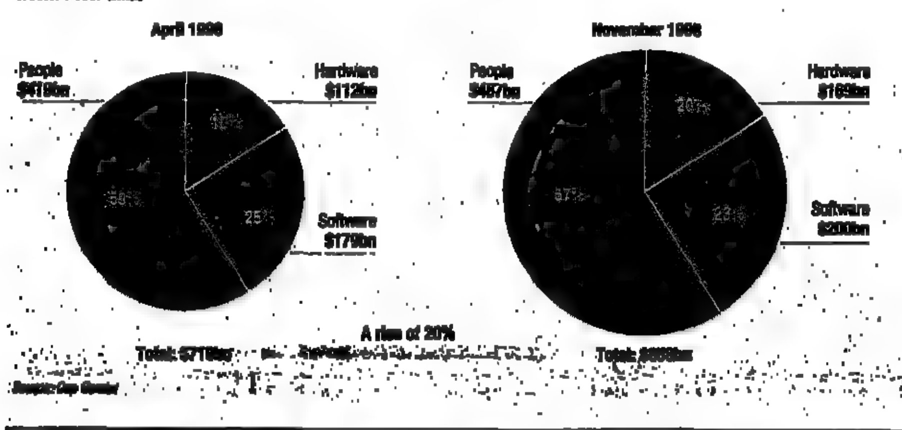
Size of problem ($billion)	% of organisations who will not have "finished" by Jan 1 2000	Progress to date as % of problem	
11	33	37	Spain
655	1	61	US
62	10	52	Germany
41	13	47	UK
10	19	49	Netherlands
31	4	48	France
6	3	52	Sweden
5	4	46	Belgium
14	0	39	Italy
3	2	55	Denmark
2	0	57	Finland
2	0	55	Norway

Source: IDC

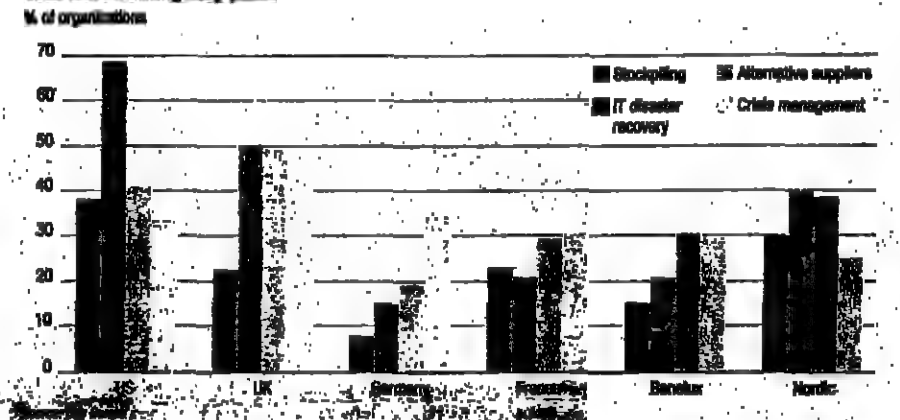


During the countdown to the millennium, traders will have the added headache of wondering if their IT systems can cope

The rising cost of defusing the millennium 'bomb'
Western economies



Year 2000 contingency plans
% of organisations



Year 2000: no contingency plans at all
% of organisations

SECTORS AT RISK by Geoffrey Nairn

Flying into the unknown

Only 10 per cent of 'critical' failures caused by the Y2K problem are likely to last three days or more

Will the sky fall in on January 1, 2000? Most Y2K experts think not.

But while the worst prophecies of the doom merchants may not be realised, the consequences of the Y2K problem are difficult to predict as the level of preparation varies widely by company size, industry sector and country.

Much progress has been made in addressing the problem during the past year in the more developed economies. IT organisations in the US, for example, have increased their spending on Y2K projects an average of six times over what was spent during 1997, according to Gartner Group, the US consultancy.

Cap Gemini, the European IT services company, has tracked the preparedness of organisations in Europe and the US through its Millennium Index report. The latest version, published last month, puts the cost of fixing the millennium bug at $858bn and says more than half, $494bn, has already been spent.

But despite a recent acceleration in spending and greater awareness of the issue, the battle is far from won.

"Even with all this progress, there are still serious risks for the US and *throughout the world*," says Lou Marcoccio, a Gartner analyst who recently testified to a Senate committee on the Y2K problem.

A recent Gartner report looks at the difference in Y2K preparedness in various countries. The most advanced are the US, Canada, the Netherlands, Belgium, Australia and Sweden.

Laggards include eastern Europe, Russia, southeast Asia, much of South America and, perhaps surprisingly, Japan. These all lag the US by more than 12 months.

Most of western Europe is six months behind the US, apart from Germany and France which lag by 12 months and eight to 10 months respectively.

Israel is ahead of its neighbours in the *Middle East* and lags the US by eight months.

Although regions such as the Middle East and Russia are further behind than Germany and Japan, Gartner analysts expect the disruption to be greatest in the latter countries because of their economies' greater dependence on IT.

The research was conducted over the summer when the Asian financial crisis loomed large. Many Asian economies have serious problems finding the financial resources to fix the Y2K problem.

"Enterprises with a high dependence on these countries for revenue will be affected economically," warns Gartner Group.

Some nations have managed to surge ahead of their neighbours in Y2K preparedness. For example, Mexico is ahead of other Latin American countries because its government has taken the initiative in raising awareness and promoting projects to reduce the risk.

Mexican financial institutions and government agencies are *subject to stringent* Y2K reporting requirements. Other countries with positive leadership include Australia and the UK.

Within each country, there are wide variations between different companies, depending on their size. The Gartner survey of 15,000 companies in 87 countries revealed that 23 per cent had yet to start any Y2K effort and more than 80 per cent of these were small companies.

The survey also looked as the levels of preparedness in different industrial sectors. The banking, investment and insurance industries are most advanced, while health care, semiconductors, food processing and government agencies are furthest behind.

Crucial sectors such as telecoms, power, water and transport, which are heavily dependent on embedded systems, are barely ahead of these laggards. This relative ranking by industry is also supported by Cap Gemini's research.

"It is no surprise that the finance sector is well ahead, but what is most concerning is *the situation in health* care and utilities," says Chris Webster, head of Y2K services at Cap Gemini.

The findings may seem to lend credibility to the "doomsday" predictions that aircraft could fall from the sky or power plants cease to function.

This is perhaps the most worrying prophecy, but Y2K experts see it as very unlikely, simply because the airline industry is highly safety-conscious and planes will be grounded rather than expose passengers to unnecessary risk.

Besides, airlines may have little say in the matter. "Many airlines and air traffic control systems are working very hard to fix their systems, but these activities will be sidelined by the insurance companies," says Andy Kyte, a Y2K analyst at Gartner Group.

Some insurance companies are understood to be considering withdrawing cover for flights over the New Year period. "And airlines cannot insure themselves," he adds.

In the electricity industry, the problem may be more real as generators cannot shut down their plants on New Year's Eve and slowly bring them up again the next day, which is the advice experts give to industries with systems that cannot be thoroughly tested.

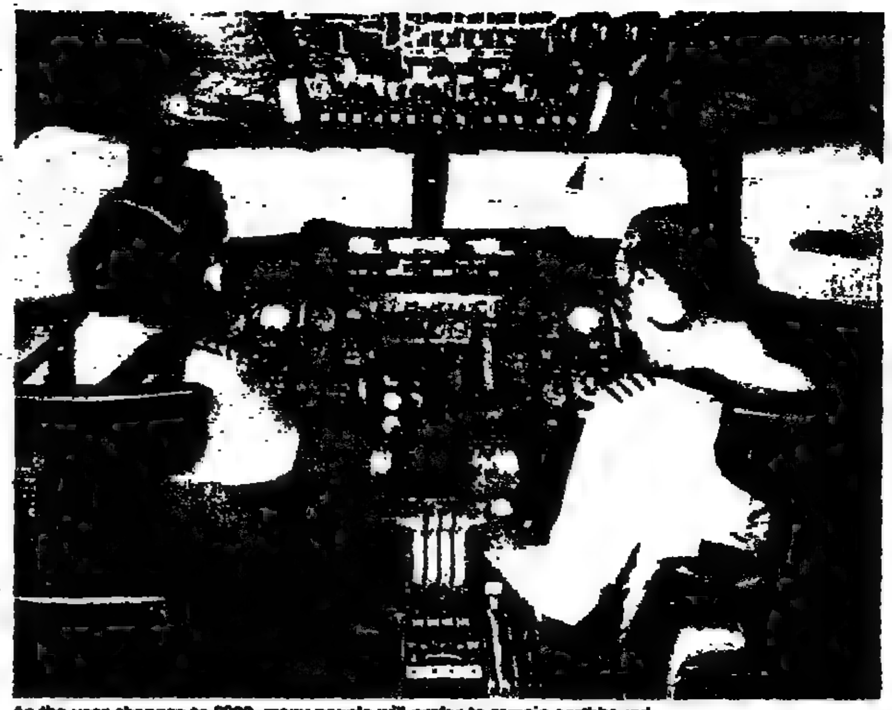
One generator's Y2K problem could rapidly become a headache for all the others as the unexpected drop in capacity could put a strain on the whole grid. But this is much the same situation as when a bad storm hits a *power grid and contingency* plans ensure that any shortfall is met and power quickly restored if a blackout strikes.

Perhaps the biggest Y2K question mark hangs over the public sector which in Europe, for example, *accounts for 22 per cent of* all IT spending.

"Most government agencies are significantly behind the US and extremely laggard overall," says Gartner Group.

Nevertheless, a few days delay in paying pensions or social security is unlikely to bring down a government and Gartner estimates that only 10 per cent of "mission critical" failures caused by the Y2K problem are likely to last three days or more.

The millennium problem *must be taken seriously.* But with suitable contingency planning, its effects on most people and businesses are likely to be limited to minor *inconveniences rather than* dramatic disasters.



As the year changes to 2000, many people will prefer to remain earthbound

Year 2000 readiness by region and company size

Percentage and total number of companies, Jan 1997

	No changes needed	Not yet addressed	Planned/in progress	Completed	Total
US					
Small	15.6	46.4	31.3	6.7	418
Medium	17.8	25.4	48.2	8.8	192
Large	12.2	20.6	60.4	6.8	467
Total	14.5	31.4	46.9	7.1	1,078
Western Europe					
Small	23.0	33.7	34.9	8.4	3,809
Medium	20.9	20.7	48.3	10.1	1,115
Large	14.9	11.7	65.2	8.2	1,748
Total	20.5	25.8	45.1	8.6	6,672
Asia					
Small	17.5	53.4	25.8	3.2	1,057
Medium	11.2	42.8	39.5	6.5	430
Large	15.4	32.9	41.6	10.0	817
Total	15.8	44.1	33.8	6.3	2,306
All regions					
Small	21.4	38.6	32.8	7.2	5,284
Medium	19.1	26.7	46.1	8.1	1,738
Large	14.8	18.8	58.1	8.5	3,032
Total	18.8	30.8	42.7	7.8	10,054

* Firm size is based on annual revenue: small firms are those with revenue [illegible] US$ 10-40 million, and large firms are those with revenues exceeding US$ 50 million

Source: IDC

Levels of risk

Year 2000 exposure and compliance by sector

	Compliance	Exposure
Finance	High	High
Banking	High	High
Insurance	High	High
Air transport	High	High
Telecommunications	Medium	High
Manufacturing	Medium	High
Most government services	Medium	High
Energy	Medium	High
Shipping	Medium	Medium
Other government services	Medium-Low	High
Health care	Medium-Low	High
Retail trade	Medium-Low	High
SMEs	Medium-Low	Medium
Agriculture	Medium-Low	Low
Construction	Medium-Low	Low

Source: OECD

THE BUDGETARY TIGHTROPE by Geoffrey Wheelwright

Cash battle for IT directors

As demand increases to update company networks, year 2000 budgets have the potential to become corporate battlefields

IT directors and chief information officers tackling the millennium computer date problem increasingly find themselves walking a budgetary tightrope.

On the one hand, they are being offered "whatever it takes" to fix the computer date problem and, for the first time, are hearing the phrase "are you sure *that is* enough?" when naming a cost for their Y2K projects.

Meanwhile, they are also facing strong boardroom pressure to make enhancements to other systems or *functions* within the corporate IT infrastructure to "leverage" the high cost of Y2K repairs.

Thus, year 2000 budgets have gained the potential to become a huge corporate battleground if IT departments are not completely scrupulous in their Y2K budget justifications. IT directors and CIOs – many of *whom* are also faced with the euro-compliance issue – can find themselves being asked to update entire networks instead of remaining *sharply focussed* on the year 2000 issue.

Mark Sokol, senior vice president of advanced technology for US software giant Computer *Associates*, advises extreme caution and suggests that IT directors and CIOs resist the pressure to use corporate Y2K projects *to* advance other agendas. CA is a leader in the year 2000 software sector and Mr Sokol himself has testified before US congressional committees dealing with the issue.

"It is so tempting [to *try* and make other system *changes*] when you are in there fixing dates," admits Mr Sokol. "But you always have to pick the applications that are the most critical to your business and *focus* on fixing the problems that are most *time critical* – in this case, Y2K.

"And if you have to do multiple applications, try and do them in parallel with multiple pipelines at the same time. In some ways, it may cost more *to* do that, but it is generally less disruptive." Bill Etherington, IBM senior vice-president, concurs. He suggests that it will not be until several months into the new millennium that companies will really find out the cost and impact of the year 2000 date problem.

Mr Etherington admits that this makes it very difficult to budget and says that IBM is so concerned about the issue that he plans to be in his office on New Year's eve next year.

"I will be at work and most of our people will be," he says. "The difficult part with Y2K is that we have never tested all the systems in the world before. The technical *challenge is not* large, but the testing challenge is huge. My personal opinion is that we will get through it, but it will be a watershed event."

Moreover, estimates on the financial impact of fixing the Y2K problem are on the increase, making it hard for senior IT executives to estimate their costs accurately. In November, a study by the Cap Gemini group estimated that the total cost to major western economies (Europe and the US) of dealing with the issue had increased from $719bn to $858bn.

It suggested that, so far, an estimated $494bn has been spent, with $238bn of that invested *in the* last six months alone. Cap Gemini further found that of the $238bn spent in the last six months, around a fifth had gone on hardware, a fifth on software and the balance on people costs.

In terms of individual corporate planning, however, it is probably more helpful to look at the a few examples to gauge how much Y2K repairs will cost. A recent requirement by *the US* Securities Exchange Commission *to state the* costs of Y2K projects is now making that research easier.

Last month, a number of large corporations filed SEC reports on their Y2K costs. One of these was fast food *giant* McDonald's, which reported that it had assessed its computerised *systems* to determine their ability to identify the year 2000 correctly and was *devoting* the necessary internal and external resources to replace, upgrade or modify all significant systems which did not correctly identify the year 2000.

McDonald's stated that it expected to complete most of its necessary modifications and testing by the end of 1998 and to complete the replacement of systems as well as the remaining *modifications* and testing by the second quarter of 1999.

Despite all of this work – and that fact that the company does not expect the *year 2000 issue to* "pose significant operational or financial problems" – McDonald's says that "in the unlikely event" that McDonald's or a *significant* number *of its key* suppliers are unable to resolve the issue in a timely manner, there could be problems.

"Such matters could have a material impact on the company's results of operations," stated the company in its SEC report. "Contingency plans are being developed to address Year 2000 issues that might arise internally or within the supply chain."

McDonald's says it expects its total costs of dealing with the *year 2000* issue for existing systems to be less than $80m, of which approximately $23m was incurred through September 30, 1998. The costs include internal modification and testing costs as well as costs associated with supply chain risk assessment and contingency planning.

It will also soon be easier to see what some financial brokers and dealers have spent on dealing with Y2K issues. The SEC recently *amended* the Securities Exchange Act of 1934 to require certain broker-dealers to file with the SEC and their designated examining authorities a report prepared by an independent public accountant on the broker-dealer's process for preparing for the year 2000.

The US leads the way, but is least confident

	US	Europe	UK
Progress to date (Spend to date as % of total estimated spend)	[illegible]	[illegible]	47
Confidence in mission critical systems (% of organisations confident)	[illegible]	[illegible] ([illegible])	[illegible]
Business continuity measures (% of organisations adopting measures)	[illegible]	[illegible] ([illegible])	[illegible]

Source: Cap Gemini

CONTINGENCY PLANNING by Philip Manchester

Compliance campaign requires a 'war room'

'There are two ways to handle the year 2000 problem – take evasive action or prepare for the consequences of breakdown'

Respectable organisations no longer have disaster recovery strategies. They have "business continuity plans".

While this shift to accentuate the positive is a fine example of marketing double-speak, it has a special resonance as the end of the millennium approaches and organisations start thinking about contingency plans.

Indeed, many are no longer thinking about "if" they will have a problem in year 2000; they are thinking about "when" and what they need to do to remain in business in the next millennium.

The "when" is easy, the "what" less so. Business continuity planning is, therefore, seen as the response to this latest twist in the saga of the millennium "bomb".

It embraces a range of disciplines from inventory auditing and configuration control to traditional disaster recovery and beefed-up help desk support. It will cost a lot of money, and it is unlikely that the cost is included in many year 2000 budgets.

Cap Gemini's Millennium index published in November shows, for example, that the US is more concerned about contingency planning than Europe. It is ahead of Europe in its conversion effort – it has spent 61 per cent of its anticipated budget against an average of 48 per cent in Europe.

But the US is the least confident about mission-critical systems and is the most advanced in putting continuity measures in place. Almost all US organisations, 98 per cent, have contingency plans in place compared with a European average of only 60 per cent, the United Kingdom leading on 85 per cent.

"In Europe, it has a lot to do with how different countries see the problem," says Chris Webster, who heads the year 2000 service of Cap Gemini, the French IT services group.

"In France and Germany, for example, they view year 2000 as a straightforward technical fix, while in the UK they see it as having a wider impact.

"Organisations need contingency plans to make sure they can get through the changeover. We think it is impossible to test everything with all of the complexities and links in the supply chain. And even if you are ready, it does not mean your suppliers and customers will be.

Power failures would have serious consequences: Europe lags behind the US in contingency planning for utilities

"There are two ways to handle it – take evasive action or prepare to manage the consequences of breakdown."

He goes on to recommend a programme of action, starting with the obvious. "There are avoidable risks, such as: why fly? Even though you might not believe that all the aeroplanes will fall out of the sky, why take the risk if you don't have to go anywhere?

"If this thinking is applied to IT systems, you only run those things you absolutely have to. Some companies, for example, are closing down for their year-end processing early, shutting down their systems to the bare minimum, then slowly bringing them up again as they are needed."

Mr Webster says organisations need to concentrate on the systems they must have running and set up what he calls a "war room" to handle unexpected problems.

Greg Rice, a director and year 2000 expert at Tivoli Systems, IBM's network management subsidiary, also sees contingency planning in military terms.

"Gartner [the IT consultancy group] estimates that 40 per cent of year 2000 conversion projects won't be finished on time, so there are bound to be a lot of problems," he says.

"The answer is to use a sort of three-part approach to work out where they need to concentrate their efforts. Most companies can probably survive on a handful of systems, so these are the highest priority.

"Then it is a question of working out which ones would hurt them if they were not running, and so on down the list."

Mr Rice recommends three layers of defence. "You need to start with the equivalent of radar – to identify what systems are out there and details of devices on the network.

"Then you need what I call 'walls around the city', a set of monitoring procedures backed up by a set of rules and remedies if the system hangs. Finally, you need the 'National Guard' – a help-desk, technical back-up and knowledge databases about fixes and changes."

The technology to support all three layers is readily available – at a price. Tivoli, for example, places emphasis on the importance of monitoring systems operations to catch year 2000 errors and provides a range of systems management tools to do this.

The "radar" early warning phase will require a system audit to identify systems, devices and applications to assess their importance. Greenwich Mean Time's (GMT) Check 2000 is, for example, geared to carrying out the special checks required in a system audit for year 2000 compliance.

"You have to start by finding out what there is out there," says David Marshall, European managing director of GMT.

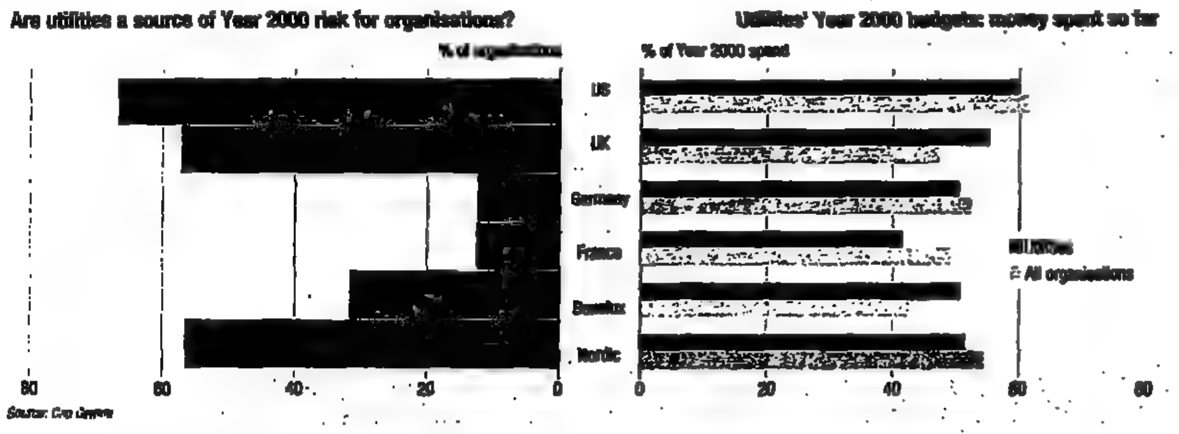
"Organisations need to plan and carry out a risk assessment process on their systems before they start fixing or planning contingency. The exercise helps to identify the level of risk each element poses to the organisation in 2000."

Help desks and on-call trouble-shooting teams form the last line of defence, or the war room. Again, a range of technology is available to support these functions and organisations should be preparing now.

All of this will cost money, of course, and it is alarming that the cost of contingency is likely to push the year 2000 bill up even higher. "Some of the budgets we've looked at seem to leave out a lot of testing costs and, although some have factored in the cost of contingency, many have not," says Cap Gemini's Mr Webster.

Are utilities a source of Year 2000 risk for organisations?

Utilities' Year 2000 budgets: money spent so far



Source: Cap Gemini

UTILITY SERVICES by Nuala Moran

Telecoms at higher risk

As well as solving the year 2000 problem, utilities must also convince the public that basic services will not collapse

There are few people and even fewer businesses which do not rely on some sort of utility service – which makes it especially important that the utilities do not suffer year 2000 failures. And while the consequences of not being year 2000-ready are likely to be far greater in this sector than elsewhere, the utilities have more work than most to reach compliance.

Not only do utilities have large, and often aged, commercial systems, such as those for billing or operations management, but they must also fix extensive distribution and processing networks which are likely to contain many embedded systems.

"The fact is that utilities have the year 2000 problem in spades," says Martin Caddick, head of the year 2000 programme at DMR, a consultancy.

"Whatever worries there may be about manufacturing companies, health services or central or local government, different standards apply to utilities and governments need to intervene to ensure continuity of service."

But according to a survey of 1,880 organisations worldwide by Cap Gemini, the computer services company, for its Millennium Index, the utilities are spending less on year 2000 than other sectors.

"I am surprised that they appear to be spending less as a percentage of total IT spend than the overall average for the country or region," says Chris Webster, head of Cap Gemini's year 2000 programme.

"After all, what really matters to people is that the lights, phones, etc are working."

The evidence from the survey, which covers 330 utilities, is that preparations are more advanced in those that are privately-owned.

"The US is furthest ahead, while France, where a small proportion of utilities are in the private sector, is further behind. My experience suggests that in the public sector, progress is slower because nobody owns the problem."

The survey also indicates that in France and Germany few organisations are preparing for the possibility of utility failures, with only 15 per cent of respondents seeing utilities as a source of risk.

"I am astounded by the low level of awareness in Germany and France. I think that in these countries, year 2000 is seen as a solvable technical problem, not as a business issue."

In the UK, the government-supported body, Action 2000 has brought the utilities together to co-ordinate millennium issues in the National Infrastructure Forum. Participants are encouraged to disclose information about year 2000 plans and possible problems. Action 2000 is also talking to its counterparts abroad in France, The Netherlands, Canada, Chile and South Africa.

Duncan Thomas, public confidence director at Action 2000 says: "Now the utilities are well into their Year 2000 projects, they need to talk to each other to cut through circular dependencies – a water company may be compliant, but unable to pump water if there is a power failure, and so on."

Mr Thomas says it is too early to say if the UK utilities will meet the deadline, but continuity plans, called millennium operating regimes, will be set up to deal with failures. "If it is possible that a pump will fail in an unmanned treatment plant, then there will be someone there to switch it back on."

The area of greatest international interdependency is telecommunications. Here, the International Telecommunications Union in Geneva, which represents telephone operating companies worldwide, has set up a year 2000 task force.

"Telecoms is probably the highest risk service," says Mr Caddick. "If bank settlements stopped for a day as a result of telecoms failure, it would be a major disaster."

Mr Caddick has worked with several of the US telecoms operating companies on year 2000. Unlike other utilities, they do not have many date-dependent embedded systems in their networks. However, failures could occur because of problems arising in date-dependent software utilities which support the network.

Problem areas

"I'm finding things are on track in terms of fixing the network management software. The problem is operations maintenance. Things that should happen every day, or every week won't – leading to creeping failures."

While he considers that Europe and the US will avoid big infrastructure failures, Mr Caddick thinks they could occur in regions where year 2000 is seen as a US and European problem and is not being tackled.

"We are not talking about plane crashes or other disasters, but an infrastructure failure in south-east Asia could have an impact similar to that caused by the current economic problems in the region."

The possibility of legal liability for failures is now starting to dominate utilities' year 2000 strategies.

In the US, for example, telcos and other utility companies are ordering independent reviews of their year 2000 projects to the US government's Independent Verification and Validation Standard. The aim is to show they have taken every reasonable measure to avoid failure if they do get sued.

Similarly, in the UK, the utilities are planning independent audits to the British Standards Institution DISC PD2000 Definition of Year 2000 conformity requirements.

The other issue for the utilities is that it is not enough to be compliant – they have to be clearly *seen* to be compliant.

Unless there is public confidence in millennium compliance, there may be a rush to the cash dispensers to withdraw money or a simultaneous turning on of taps as people guard against a cut in water supplies.

To avoid this, utilities must inform the public about the year 2000 programmes they have carried out, warn of possible failures, and publicise contingency plans.

Action 2000 is planning widespread publicity campaigns with the utilities, leading manufacturers and food distributors throughout 1999. "We must make sure people know action has been taken," says Mr Thomas.

CASE STUDY
UNITED UTILITIES

Going for platinum and gold solutions

A millennium spring clean can refresh company assets and give their efficiency a useful boost, writes **Nuala Moran**

If the utilities have a special duty to keep essential services flowing over the millennium, then United Utilities, which supplies not one service, but five, has particularly weighty year 2000 responsibilities.

Under the brand names of North West Water, Norweb, Energi and Norweb Communications, the company supplies water, sewage, electricity, gas and telecommunications services to 2.8m customers in the north-west of England. In addition, it has several overseas joint ventures which it must also ensure are millennium compliant.

"This is a business problem and not an IT problem," says Norman Tooley, programme director for year 2000 at United Utilities.

"The individual businesses are responsible and accountable for their own programmes, but overall responsibility rests with a programme board, which has director-level representation from across the group and reports directly to the chief executive."

The programme currently involves more than 200 full-time staff, and will cost between £40m and £45m. It is being managed by Vertex Data Science, the outsourcing company which was formerly North West Water's in-house IT department.

Work began in March, 1997, but early in 1998, IBM was asked to review the programme. This led to a change in approach in which United Utilities acknowledged that it was impossible to fix everything, and instead organised the programme into levels of importance to ensure that the most business critical systems were fixed first.

"We assessed everything in terms of its level of criticality to the business, and then decided on priorities," says Mr Tooley. Systems were divided into four categories: platinum, gold, silver and bronze.

Business critical platinum systems will be compliant by the end of this month; gold systems, which are important but not critical, will be fixed by February, 1999; silver systems, where failure would have an impact, though not large enough to threaten the business will be fixed by April, 1999; and bronze systems, deemed to have minimal impact will be left, but sufficient resources will be available to fix them if they fail.

Each of United Utilities' business units is carrying out a five-stage process to ensure compliance. This involves:

Any potential risks from key service suppliers and for industrial customers must be carefully assessed

- Scoping to create an inventory of all assets that rely on date processing;
- Impact assessment to assess the probability of each asset failing and its impact on the business;
- Planning and conversion, the detailed planning and analysis of the changes required to convert a system. Assets can either be replaced, changed or designated of low priority and fixed they fail;
- Testing, to ensure assets are compliant, and that remedial action has not impaired existing functionality;
- Implementation, to bring the compliant systems into service.

The conversion, testing and implementation is being carried out by internal teams, to a repeatable and consistent standard. Once assets are confirmed as year 2000 compliant they are put under "clean management", a set of disciplines that ensures they remain compliant.

The company has a number of overseas joint ventures, including projects in the Philippines, Australia and Argentina, which are also included in the overall year 2000 programme.

"There is a perception that year 2000 is a European and US problem, and it has been more difficult to make it an issue with joint venture partners. However, the instances [of non-compliance] are not quite as major because the assets are less complex, and a lot of them are fairly new."

The millennium problem does not end here for United Utilities. "We also have to assess the risk to services provided by suppliers and we are working with them to ensure they will comply," says Mr Tooley. Key suppliers will be audited and in some cases contingency arrangements will be put in place to ensure continuity of service.

There is also the delicate task of checking that some of the larger industrial customers are compliant. For example, in waste water treatment, a significant pollution incident could be triggered if a manufacturing company discharged waste water that was more polluted than usual.

A manufacturer could exceed discharge consents because of a failure of internal systems, or because of a power failure or water shortage.

"Everyone is dependent on everyone else, and we have had lots of discussions and statements on cross-compliance, and of where we fit in the jigsaw." This raises the issue of legal liability. United Utilities has signed Pledge 2000, an undertaking that it will not take small businesses to court for problems caused by year 2000 failures.

Mr Tooley says the company is currently assessing what the legal stance should be in the event of a major incident.

United Utilities is staffing its year 2000 project mainly with contractors, and says it has not cut back on IT investments and budgets elsewhere in the business. But even if there is no opportunity cost, year 2000 is bound to be a distraction at a time of great change in the utilities sector.

Following privatisation and the merger of North West Water and Norweb to create United Utilities, the company now faces the challenge of capitalising on deregulation in the electricity and gas supply markets.

Each of these has soaked up significant IT resources.

"In relation to other IT spending, year 2000 came at a reasonably good time. We had changes to IT systems demanded by mergers, deregulation and so on, well under way. The budget for year 2000 was extra, and has not cut into money for other projects."

There is a tendency to think of year 2000 spending as dead money: while a failure to spend could put companies out of business, the actual spending does not improve the business. But Mr Tooley believes that the complete spring clean prompted by year 2000 means that United Utilities systems now in much better shape.

"There is no doubt that it has refreshed the asset base, and made us realise that some assets were not as efficient as they should be." Despite his confidence that United Utilities will complete its year 2000 programme in time, however, Mr Tooley also acknowledges that there are some elements, especially embedded systems, which will not be fixed.

"We can't chase all the systems, so we can't rule out failures. Obviously something like electricity is fail safe. With something like water treatment plants, you can concentrate on fixing the main ones. If you fix 20 per cent of the assets that covers 80 per cent of the population. The aim is to fix enough, so we know we can meet demand.

"We won't cover every last millennium problem, and so we are upgrading our existing contingency plans, and drawing up millennium emergency plans." This involves identifying where there may be failures and having staff on standby to deal with them.

In 1999, the company is planning a year 2000 communications campaign to tell its customers that systems are compliant.

"We must ensure public confidence in the continuity of services. The worst thing that could happen is if everyone decides to fill the bath with water at 10pm on December 31, 1999," says Mr Tooley.

EMBEDDED CHIPS by Tom Foremski

System failures could be a matter of life and death

Keeping utilities and factories going at the millennium changeover will have many experts holding their breath

The year 2000 date change will be a serious and potentially dangerous test for embedded systems. Not only is it difficult to determine the extent of any problem, but it is also hard even to know if an embedded system is vulnerable.

Embedded systems are used everywhere to run a huge number of systems, ranging from the mundane such as microwaves, video recorders and cars to the more serious and sophisticated such as telecommunications systems, power plants, medical equipment, weapons systems and huge chip factories.

There are probably 5bn embedded chips in use in the US, according to estimates by the President's Council on Year 2000 Conversion. Even if 2 per cent fail due to Y2K that means 100m chips out of action.

Embedded systems usually consist of a microprocessor with additional chips such as memory. The software is contained within what are called Read Only Memory (ROM) chips.

In addition, the software controlling embedded systems is written in low level programming languages that make them very difficult to examine. In the majority of cases, the chip itself has to be replaced. There is no way to replace just the software in the chip.

Most embedded systems that control systems such as elevators, traffic signals and home based products are unlikely to cause much lasting damage.

"Embedded systems in elevators, for example, might act erratically and there could be traffic problems because of traffic signal problems," says Jim Turley, embedded chip industry analyst at MicroDesign Resources, a US market research company.

"But these should not be life-threatening. For embedded systems in hospitals, or power plants the problem could be worse."

The problem is made more difficult because there is little available information on the Y2K vulnerability of embedded systems. Add the problem of finding their location and the complex interactions of many interconnected embedded systems, and the problem rapidly becomes huge.

"In some cases, an embedded system is not easily reachable or is impossible to reach," says Capers Jones, chief scientist of Artemis Management Systems of the US and an internationally respected Y2K expert.

"There are embedded systems in transatlantic telephone cables at the bottom of the sea. They are hundreds of feet underground in oil drilling rigs and they are in satellites."

Electric power utilities make use of large numbers of embedded systems. If electric power grids fail, the Y2K problem in other computer systems will not be known about until much later, delaying recovery efforts.

And in the US, where winter temperatures in many states can fall to very low levels, a power failure lasting several days could easily kill many people, even if they have oil- or gas-fired heating systems because these require electric power to operate.

Earlier this year, the US Senate set up a special committee to investigate Y2K efforts by utilities and found that many of the largest lacked contingency plans and had not yet assessed the scope of the problem.

Utilities face a particularly serious challenge in that a failure in one part of the electric power grid can trigger failures in other parts of the country.

Chip production plants, known as fabs, are especially vulnerable to embedded systems failures.

Chip fabs are among the most complex industrial production systems, costing as much as $2bn to build. Tens of thousands of embedded systems control the various stages of chip production, the clean room environment, the safety systems that handle the toxic gases and chemicals, the ventilation and heating systems and the telecommunications and network infrastructure.

Gartner Group, the US market research group, predicts that the world-wide chip industry faces potentially serious disruptions due to Y2K. About 90 per cent of equipment used in chip fabs have Y2K problems.

It warns that most chip companies have a "considerable attitude of denial" and have yet to take measures on Y2K.

Sematech, the US research and development consortium, has been warning chip makers that they face a nightmare problem in identifying Y2K bugs in their production systems.

Sematech has listed more than 8,200 production systems that have embedded systems with possible Y2K problems, and so far fewer than 900 fixes for these systems have been made available.

"We have found that newer chip production systems carry a greater risk of Y2K problems because they contain more software," says Harvey Wohlwend, Y2K program manager at Sematech.

"Older production systems don't rely on date fields quite so much."

In terms of finding embedded systems, Mr Wohlwend uses the analogy of replacing light bulbs in a house. The main ones are easy to spot and reach, but there are light bulbs in stereo systems and other electronic equipment in places where you might not expect to find a light.

Such a problem pales in comparison with locating all the embedded systems in today's modern manufacturing plants.

Sematech has asked more than 1,400 suppliers of chip production systems to have solutions available by the end of this year. Mr Wohlwend says that not all suppliers will meet this deadline, and some have told Sematech that they will not be ready until some time next year, a situation he calls unacceptable.

Intel, the world's largest chip manufacturer, says it is well aware of the chip fab problem and is on schedule in fixing potential problems. Texas Instruments says it has analysed all of the systems in use in its fabs and 98 per cent are scheduled to be fixed by June, 1999.

The World Semiconductor Association has formed a working group to come up with a list of proposals for chip producers in Europe, Japan and South Korea. But this effort may be too little and too late to avoid problems.

A key issue facing chip manufacturers is that changing the software in their embedded systems can introduce new bugs requiring rigorous testing. And sharing information between chip makers is difficult, because each fine tunes its own production processes and has closely guarded secrets which it does not want to share with competitors.

"With embedded systems, if you find there is a Y2K problem you need to order a replacement board from the manufacturer," says Ed Yourdon, chairman of the Cutter Consortium, a US IT consultancy, and a leading Y2K expert.

"In many cases, companies are getting delivery dates of mid-1999 because they haven't geared up production to handle that demand."

CASE STUDY
INTEL

No magic bullet to save the laggards

Only by searching rigorously through every system can potential problems be eliminated, reports **Rod Newing**

A handful of chips: Intel has checked 35,000 embedded systems

Intel Corporation, the world's largest manufacturer of computer processors, has discovered that there are no magic fixes to the year 2000 issue.

"It is only solved by good, hard rigorous work and paying attention to detail," says Louis Burns, Intel's chief information officer.

Following a series of smaller initiatives, Intel established a formal Year 2000 Program Office at the end of 1996. The project was divided into four areas: the supply chain infrastructure for materials and equipment; manufacturing, which accounted for three-quarters of the effort; other information systems; and products.

The project started with a basic search to understand what systems the US company had in place. An inventory was drawn up, the magnitude of the problem established and the different resources were allocated.

"As we got into it, we discovered that there was nothing particularly unique about a year 2000 project, just a lot of discovery and a lot of detail," Mr Burns says.

"It was a broad project, but not deep in terms of complexity. However, we didn't envisage the magnitude of the effort when we started. We were well into the project before we really understood even the magnitude of the inventory we had to go through."

Each of Intel's 18 main factories around the world contains a host of manufacturing equipment, as well as thousands of controllers for fire, security and safety systems. It has looked at 35,000 embedded chips, of which 100-200 were critical. Of these, 80 per cent were already capable, leaving a very small number to repair.

Intel still has a huge and intense focus on finishing its remediation and deployment and is on schedule to be ready by the end of the first quarter of 1999. It will then continue integrated systems testing through the rest of the year.

It is also looking at the potential problems connected with the 99th day of 1999 and September 9. The company is looking at contingency plans for problems that are unexpected or outside its control. It is using scenario planning, from simple issues to nightmare disasters, to see what it can do about them.

Airports, for example, are very complex. If their information systems or cargo-handling systems are not Y2K-capable, they can establish staging inventories. "In some cases, you can do a lot," says Mr Burns, "but in others there is not much you can do, such as power supplies."

The estimated final cost of the project is up to $250m.

This covers full- and part-time internal staff and charges for remediation and replacement of equipment.

There was a very small amount of external consultancy support at the beginning to help understand the problem and set up the project. The project holds monthly reviews with the executive office of Intel about the specifics of the year 2000 programme.

Mobilisation

There is also a quarterly two-hour review with the board of directors and a short up-date in the intervening months. "The whole company is mobilised and focused and the necessary resources around the world are being applied," says Mr Burns.

"It is our number one priority and if a surprise comes, resources are 'swarmed' and there are no debates about additional funding."

Intel encountered three main problems. The first was its inability to disclose information through fear of lawsuits.

Now that the US has passed a year 2000 disclosure law – giving IT companies immunity from prosecution over any information they make available on their millennium readiness – Mr Burns is glad he can start talking to other companies and that the work can be done by technical people, not lawyers.

The second problem was understanding global infrastructure issues, such as power, water and sewers. The last was getting the work done around the world, despite the extreme views of those either insisting there was no problem or arguing that it was insoluble.

"As our industry operates on a world-wide basis, we hope that other companies around the world will take the same level of intensity," says Mr Burns. "The vast majority of US companies are well along, but Europe is lagging and Asia is way behind the rest of the world," he says.

"Our biggest worry is how to ensure that the world at large is ready, when many companies and governments have started too late and are now trying to close the gap."

There is still plenty of work to be done, but Mr Burns believes that Intel is in an excellent position to deal with year 2000.

"Many other companies are treading the same path, but we would like to see still more companies being pro-active about the problem to ensure that global infrastructure issues are adequately addressed."

A GUIDE TO MILLENNIUM HELP

Companies need to gear up their preparations

Severe dangers persist in the UK public and small business sectors, but help is at hand, writes **Jola Shillingford**

Robin Guenier of Taskforce 2000: stressing the need for foresight and helping hard-pressed companies with contingency planning

Although British organisations have now completed just about half their work on the millennium issue, there is still much to be done, warns Chris Webster, head of year 2000 services at Cap Gemini, the French computer services company. He expects "the race to go all the way down to the wire".

But he adds ominously: "In the past six months countries such as France and Germany have accelerated their efforts [to fix the year 2000 problem] while the UK has simply not made the same rapid progress despite repeated calls to action from the government."

"There remain some severe dangers, especially in the public and small business sectors."

However, the latest Cap Gemini Millennium Index, designed to alert companies, organisations and governments to the impact of the date change problem, does show evidence that UK organisations have reassessed the amount of work they have to do.

Realising that they will not fix all their systems, they have begun to focus on business continuity planning. The latest index also confirms fears that the UK small business sector is a millennium under-achiever.

One in three small and medium enterprises have yet to start work, evidence that the small business sector is still not treating the issue with sufficient urgency.

The good news for companies which still have work to do is that there are many sources of online and off-line help available on the year 2000 problem. On the facing page is an international list of Y2K-related web sites, while a selection of UK-based groups appears below:

☐ Action 2000. This government task force to help companies fix the millennium bug says its web site and action line have taken many thousands of calls and visits from businesses seeking practical, plain English advice on how to go about tackling the bug. The web site is at *www.bug2000.co.uk* and the action line number is 0845 601 2000.

The task force has also set up Pledge 2000 to encourage companies to adopt a collaborative, as opposed to litigious, approach to resolving the bug. Action 2000 says hundreds of companies of all sizes and sectors have signed so far.

☐ Bug Buster. Bug Buster Assess and Manage courses have been designed by the British government to help businesses identify and solve potential problems on their own systems. They are free to companies with fewer than 250 employees.

Other free courses are then available, if necessary, to provide more in-depth assistance with specific problems. All the courses also take a long-term view to help companies improve their IT provision on many levels for the future.

The training hotline number for companies to phone for the free Bug Buster courses is 0845 609 1100 (local rates).

☐ Business Link. This national network of local partnerships, supported by the Department of Trade and Industry, provides a range of subsidised advisory and information services, including year 2000 help, to small and medium-sized businesses. Business Link London is on 07000 40 50 60.

☐ CSSA. The Computing Services and Software Association is largely run for IT suppliers. But it has also published some advice for computer users, says John Corden, the CSSA's year 2000 spokesman and millennium director of Cyrano, the testing tool company.

This includes a guide, produced in conjunction with the Electronic Industries Association, on how people should go about testing their systems.

CSSA has also done a lot of work with the British Standards Institution to make its year 2000 compliance standard more pragmatic – to allow, for example, a year 2000 solution called "date windowing".

The CSSA has published a guide to interpreting the BSI standard. Both guides are free and available on the CSSA's web site at *www.CSSA.co.uk*. Alternatively, the CSSA can be contacted at 0171 395 6700.

☐ Computer Weekly. The UK magazine's web site has a dedicated year 2000 news section, including a guide to suppliers and products. It is also possible to interrogate a database of compliance software or download a 90-minute overview of the main issues and problems affecting management and technical staff.

In addition, there is a free question and answer forum that lets users question specialists such as Karl Feilder, founder of millennium tool company, Greenwich Mean Time; and Simon Halberstam, of law firm Halberstam and Ellis. The site is at *www.computerweekly.co.uk*.

☐ National Computing Centre. This has a computer diagnostic tool, Comply2K, and gives advice on year 2000 issues. Its millennium helpline is on 0700 2000 999.

☐ Taskforce 2000. This campaigning body, helps to solve year 2000 problems indirectly by raising awareness of the issues. Robin Guenier and his directors speak several times a week at conferences and he also helps company boards of directors to develop contingency plans.

Taskforce 2000 charges for this service and the fees are fed back into its funds. "Contingency planning is becoming almost the most important subject," Mr Guenier says. "But it is difficult, because you can't do it until you define the contingency."

Contingency planning is becoming a global concern. Mr Guenier and a representative from the World Bank recently spoke on the subject at a Global Year 2000 summit.

Taskforce 2000 also has a kind of stakeholder club, including 20 big UK companies, which provide funds in return for regular briefings, press clippings and seminars on the Year 2000.

Mr Guenier says: "The 'club' acts partly as a clearing house where I can put people together who can learn from each other's experiences."

Taskforce 2000 is contactable on 0171 562 7650 and its Internet web site is at *www.Taskforce2000.co.uk*.

☐ Testing tools. Many testing tools have been developed to check whether IT systems are year 2000 compliant.

The CSSA's Mr Corden says: "There are three or four different classes of tools, including tools that can help people find out what is wrong with a system and fix it, such as Visoft and Piercom; testing tools, such as those from Cyrano, Mercury Interactive and Compuware, which find out what a system does with dates; date simulation tools like Timelord; and tools that scan everything on a system and produce a report, such as tools from Greenwich Mean Time."

☐ Year2000.com. A year 2000 newsgroup run by Peter de Jager, the millennium "bomb" guru, can be found at *www.year2000.com*. The site also has the details of a useful Internet newsgroup, where IT managers and others discuss year 2000 issues and their experiences of tackling the problem.

☐ Other advice. Many IT companies publish information about the level of compliance of their products on the Internet. Industry associations for different market sectors and chambers of commerce also tend to provide millennium advice or information sharing programmes. *See also web site listing on facing page.*

INFORMATION SOURCES

Year 2000-related web sites

Among the many web sites related to the year 2000 problem are the following:

☐ Global 2000 Co-ordinating Committee: http://www.global2k.com/
☐ World Bank web site: http://www.worldbank.org/y2k/
☐ World IT and Services Alliance: http:/www.itaa.org/witsa.htm
☐ European Commission Y2K and the euro site: http://www.ispo.cec.be/y2keuro/
☐ US Federal Reserve Board Y2K site: http:/www.bog.frb.fed.us/y2k/
☐ Federal Reserve Bank of New York Y2Ksite: http://www.ny.frb.org/bankinfo/y2k/index.html
☐ US President's Council on Year 2000 Conversion: http://www. y2k.gov/java/index.htm
☐ German Federal Government: http://www.iid.de/jahr2000/bericht2000/index.html
☐ French Ministry of Economic Affairs, Finance and Industry: http://www.industrie.gouv.fr/
☐ Bank for International Settlements: http://www.bis.org/ongoing/
☐ Britain's Department of Trade and Industry; Action 2000: http://www.bug2000.co.uk/
☐ UK Cabinet Office Year 2000 team: http://www.open.gov.uk/year2000
☐ Taskforce 2000 in the UK: http://www.Taskforce2000.co.uk
☐ OECD website: http://www.oecd.org/puma/focus/current/timebomb.htm
☐ OECD year 2000 national links web page: http://www.oecd.org/dsti/sti/index.htm
☐ Japan: Initiatives of the Prime Minister's Office: http://www.kantei.ho.jp
☐ Switzerland's Y2K Millennium Site: http://www.millennium.ch
☐ Netherlands Millennium Platform: http://www.mp2000.nl/millen/Millen.nsf/
☐ New Zealand's Y2K Task Force: http://www.y2k.govt.nz/
☐ Italian authority for IT in the public sector: http://www.aipa.it/attivita/anno2000[11/index.asp
☐ Ireland's Civil Service, Finance Dept: http://www.irlgov.ie/finance/y2k.htm
☐ Australian Government: http://www.www.ogit.gov.au/year2000/yr2000.html
☐ Belgium's Millennium Foreum 2000: http://www.y2000.fgov.be/index.htm
☐ Canadian Federal Government: http://www.info2000.gc.ca
☐ Portugal's Instituto de Informatica: http://www.inst-informatica.pt/
☐ Spain's 'Map 2000': http://www.map.es/csi/2000.htm
☐ Mexico's Proyecto Ano 2000: http://www.secodam.gob.mx/proy2000/
☐ Swedish Millennium Commission: http://www.2000-delegation.gov.se/english/index.htm
☐ Denmark's Ministry of Research: http://www.fsk.dk
☐ International Air Transport Association (IATA): http://www.144.194.16.11/y2k/index.htm
☐ International Telecoms Union (ITU): http://www.itu.int/y2k/
☐ Gartner Group web site: http.//www.gartner.com/public/static/home/home.html
☐ International Data Corporation website: http://www.idc.com/
☐ SAP, the software company: http://www.sap.com/y2000/index.htm
☐ UK-based groups and web sites are also listed on the facing page.

Michael Wiltshire

Wall Street regulators have put pressure on listed companies to come clean about their year 2000 efforts

MILLENNIUM STOCKS by Geoffrey Nairn

High-flyers come down to earth with a bump

Wall Street had big hopes for Y2K-related shares but the excitement has gone and prices have dropped sharply as the moment of truth approaches

The year 2000 has come and gone on Wall Street – at least as an investment theme – and it has left investors with a big hangover.

Software companies whose share prices soared in 1997 in anticipation of a boom in Y2K work, have seen market sentiment rapidly reverse and prices collapse when they failed to meet expectations.

Micro Focus is the latest in a growing line of Y2K-related stocks to disappoint. After seeing its share price treble in 1997, the software tools company came down to earth with a bump last month.

Martin Waters, the chief executive, announced "lower than anticipated demand" for year 2000-related products and services in its key north American market. Its share price fell to the level of 18 months ago.

When the Y2K issue first started to receive wide coverage two or three years ago, financial institutions saw it as a golden investment opportunity.

"The problem is real and huge [and] the time for investors to buy is now," said JP Morgan, the US investment bank, in a 1996 research note on Y2K stocks. Corporations and government agencies would have to spend $200bn, one of the more conservative estimates, to fix the problem. Unlike other IT expenditure, the deadline could not be pushed back. "The year 2000 problem could account for all the forecasted worldwide systems integration services revenue through 2000," predicted JP Morgan.

It drew up a list of 30 or so stocks that it predicted would benefit most from year 2000 work and divided these Y2K "plays" into four broad categories: contract programming companies such as Amdahl and Data Dimensions, specialist Y2K tools suppliers such as Micro Focus and Viasoft, traditional large systems integrators such as EDS or Computer Sciences, and a fourth set of companies destined to benefit in other ways, such as recruitment agencies.

However, few of JP Morgan's selections have lived up to expectations and a heavy exposure to Y2K work has become a mixed blessing for these companies as investors worry that sales of Y2K products and services could soon dry up.

Viasoft was traditionally seen as one of the strongest suppliers as half its revenues come from Y2K work. "Y2K revenue is not going to fall off anytime soon," says Steven Whiteman, Viasoft chairman and chief executive. But in October, it announced a quarterly loss and plans to lay off 10 per cent of its workforce.

Impact

"Weaker demand and increased competition worldwide for Viasoft's Y2K software tools had a negative impact on first quarter results," says Mr Whiteman.

In mid-1997, at the height of the Y2K boom on Wall Street, Viasoft stock reached $65. Last month the price collapsed to $4.

Data Dimensions is similar in size to Viasoft – annual revenues for both are running at $100m – and was also promoted as a pure play on the Y2K problem. An investment group led by George Soros, the billionaire investor, was one of the first to spot the company's potential and its share price soared by 400 per cent in 1997.

Data Dimensions' share price fell during early 1998 along with many of its competitors, but it has recently recovered following a set of quarterly results that exceeded analysts' estimates.

"Our year 2000 business continues to grow," says Larry Martin, the company's president and chief executive.

A few other Y2K plays are also doing well, including Tava Technologies, which recently announced record orders for its Y2K products and services, and Compuware, the large US software house.

The wide difference in performance of the various Y2K stocks illustrates one of the biggest problems in looking at the sector from an investor's perspective. The market is far from homogeneous and organisations have adopted widely different strategies, timetables and technologies to fix the millennium bug.

Some large organisations have handed responsibility for Y2K to their IT outsourcing partners and expected them to fix the problem within an existing contractual relationship, says Margaret Joachim, European head of Y2K services for outsourcing giant EDS.

An unexpectedly large number of companies have used existing IT staff to perform some or all of their Y2K project. The Y2K issue has thus not produced the expected boom for outsourcers.

Vendors of Y2K software tools should fare better, with more organisations choosing to fix the problem internally, but competition in the tools sector has increased dramatically since 1996 and the needs of the market have also changed.

The millennium date problem was originally thought to affect mainly the older mainframe programs written in the Cobol language. But the Cobol tools market has now peaked and tools vendors are having to look elsewhere for new revenues.

"Large organisations are pretty far down the road to solving the problem in their mainframe programs," says Mr Whiteman.

Viasoft rose to prominence mainly because of its Cobol Y2K tools. Ironically, its present financial difficulties are due not so much to problems in this traditional business as to cost overruns on a new range of tools it developed to find the Y2K bug in desktop PCs – a market the Y2K industry has largely ignored.

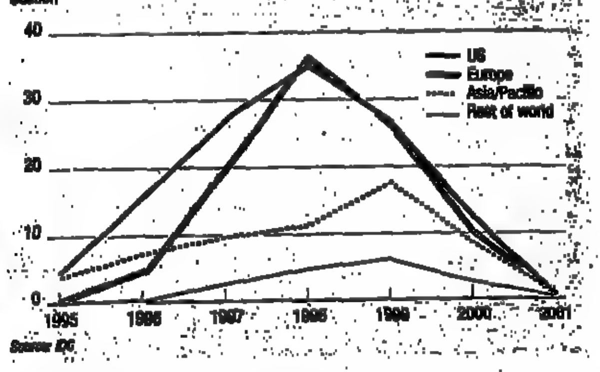
"The desktop is the biggest area where companies still need to look for Y2K problems and the new opportunities for us are here," Mr Whiteman says.

Viasoft is also looking beyond 2000 and is promoting the use of its tools to develop new applications by "modernising" and reusing code from existing "legacy" programs instead of developing them from scratch, a costly and time-consuming process.

Mr Whiteman says this represents the new face of Viasoft and, unlike Y2K, this work is not going to dry up suddenly. His only problem is to convince a disillusioned Wall Street.

"Investors were looking for a simple Y2K investment story but there never was one there," he says.

Year 2000



Source: Gartner

Business continuity

What measures are organisations adopting?

Risks	US (%)	Europe (%)	UK (%)
Failure of essential services	87	33	57
Failure of networks/mainframes	72	38	63
Failure of IT systems	78	43	67
Failure of trading partners	66	26	47
Actions			
Stockpiling	38	18	22
Alternative trading partners	66	28	50
IT recovery services	41	32	49
Crisis management	33	31	42

Source: Cap Gemini

KEY BUSINESS ISSUES
DISCLOSURE

Investors worried by companies' silence

Regulators are trying to force more companies to be open about their Y2K preparations, writes **George Black**

Boards of directors are coming under increasing pressure to detail their companies' responses to the year 2000 problem.

This follows a strongly worded pronouncement by the Securities and Exchange Commission, the US stock market regulator, in the summer.

Arthur Levitt, the SEC's chairman, wrote to more than 9,000 companies trading on the New York Stock Exchange and Nasdaq – including some leading European companies – insisting that they provide "thorough, meaningful disclosure on this topic" within the next quarter. He threatened legal action if they did not obey.

This demand went further than the request by the London stock exchange in March that listed companies should make a statement on the issue by the end of the year.

The SEC was worried that companies were evading the issue and not providing the information to which investors have a right.

Many British companies have made only scant reference to the problem in their annual and interim reports, while some have not mentioned it at all. In so doing they have also been ignoring the instruction of the Accounting Standards Board's Urgent Issues Task Force, which asked companies to make a full statement as early as possible.

Even this autumn only 79 per cent of UK companies filing reports referred to the millennium "bomb" and of these, only 64 per cent estimated the cost of fixing it, says Graeme Farmer, assistant editor at Company Reporting in Scotland, which monitors annual reports.

"Very few companies give much detail and they are very optimistic in their brief statements," says Mr Farmer.

Costs which companies say will be involved in fixing it range from nothing to £100m. Few companies have discussed what impact these costs might have on their profit figures and few describe contingency plans for dealing with systems failures.

Some say that, although their own compliance programmes are in hand, they cannot vouch for their suppliers. Others say they are seeking guarantees from suppliers.

It is suspected that many companies are saying as little as possible on the subject because of concern that any statement could make them liable and alarm shareholders about costs involved. To counteract such secrecy the US Congress voted for a new law giving legal protection to firms which share millennium bug information.

The intervention of the SEC raises the stakes. Companies are being forced to give a much more comprehensive explanation of their policies for tackling the bug in order to retain the confidence of investors and ultimately in order to continue trading publicly.

Recently the SEC fined 37 brokerages for failing to report their progress on the issue.

"There are going to be severe repercussions for companies that do not provide full disclosure fairly soon," says Andrew Rigby, partner in Tarlo Lyons, the London law firm which specialises in the subject.

SEC rules require companies to be open about matters that affect liquidity, their capital resources and their trading operations as well as any matters which could have a material financial impact on their business.

It has identified the year 2000 bug as a matter which could have such a material financial impact.

Some companies have opted not to mention the issue in their reports on the grounds that they consider it will not have a material financial impact on them.

Turn to next page

FT IT

Themes for 1999

For details of the main themes to be covered by the FT-IT Review next year, see list on page 22 of this issue.

LEGAL ISSUES by Joia Shillingford

Millennium failures could lead to claims bonanza

Lawyers can expect plenty of business, but companies should count the cost of suing their IT systems suppliers

Sending in the lawyers may not be the best way of getting your year 2000 problems fixed, according to Berwin Leighton, the City of London legal firm.

Ian Lowe, a partner, says: "Trying to get the supplier to pay for year 2000 work can mean you take your eye off the ball instead of getting the work done on time. At this stage, you should be co-operating with suppliers."

Mr Lowe's advice tallies with the policy of the UK government's Action 2000 initiative to help companies fix the so-called 'Y2K' problem. It is encouraging companies to sign a no-litigation pledge and many, including Tesco, the supermarket chain, have done so.

Signing the pledge does not totally rule out later litigation, says Mr Lowe. "You should make it clear to suppliers, by sending some sort of letter, that you are keeping your options open so that if, come 2000, you need to make a claim, you can still do so."

But the issue of going to law is finely balanced. It really comes down to cost. If the expense of fixing year 2000 problems is relatively small, this will probably be cheaper than the cost of legal pressure on the supplier. "If the costs are very large, it's worth looking at the original supply contract," adds Mr Lowe. "But it is often not clear-cut whether there is any obligation on the part of the supplier. There are often exclusion clauses. Or the supplier will say 'we produce regular upgrades and year 2000 was always meant to be one of those upgrades'. It's hard to argue against that."

The issue of embedded microprocessors is potentially more fraught. These are not routinely upgraded and are intended to have a long life. Some people – especially in the construction industry – see 1995 as a cut-off point and are saying that anything bought after 1995 should be Y2K-compliant.

To date, there has not been a single year 2000 claim in the UK. "There have been a handful of cases in the US, including one where credit card readers in a supermarket could not read cards that expired after the year 2000," according to David Lawler of forensic accountants Buchler Phillips Lindquist Avey.

"Either Europeans are being pragmatic, or they don't want to divert the resources of their supplier," he says. "Or they have looked at the lead times for getting a solution from a rival supplier and decided to stick with the existing one."

That does not mean that UK companies are taking no recourse to the law. Some have drafted special contracts for their year 2000 contractors. For example, one supermarket chain has a contract with a built-in £1m penalty (called a liability cap) which the computer services company it is using will have to pay if it defects to another client.

More litigation is likely in 2000 but it is hard to estimate how much. Nor will the lawsuits necessarily start immediately. "I see a period of grey, malaise at the beginning of the year 2000, while systems fail and people can't get into their offices," says Richard Lister, a Berwin Leighton partner.

Predictions

"There'll be three to six months of irritations in 2000, while people work out who they're going to sue," he predicts. "And there could be a flurry of claims just before the end of 1999, while people who haven't been able to fix their Y2K problems try the commercial litigation route.

"We are working with some companies to establish a series of trigger points when action might be taken if a supplier fails to fulfil actions critical to compliance."

In the US, the year 2000 legal climate is different. Law firms are expecting litigation in the trillions of dollars because of the year 2000. They say courtrooms in Los Angeles are booked up for the next three years.

More mundanely, many US law firms are sending teams of lawyers in to their clients' offices to deal with the Y2K paper mountain – the masses of letters to and from suppliers, asking them whether they are year 2000 compliant. "They would only be doing that if they [the clients] were intending to sue later," comments Mr Lowe.

Some lawyers believe the level of paper-chasing on both sides of the Atlantic is excessive. Essentially, a blue chip company will send a letter containing binding legal clauses to 10,000 suppliers. But skilful suppliers can still reply in a way that shows they are responding to customers, but which falls short of promising anything.

Year 2000 warranties supplied with software and hardware do promise compliance. But even here, there can be a problem if products are supplied from the US.

"In the UK and parts of Europe, the BSI [British Standards Institution] Y2K conformity document has become the industry standard," says Mr Lister. "But when a European company is dealing with a big US software company it can be hard to move them away from their head office policy."

If all else fails, there is still litigation or, in some cases, insurance. Insurers are, however, wary of committing themselves to paying out if products are not year 2000 compliant. But they may pay up if a company which has taken reasonable steps to ensure compliance still loses money due to business interruption stemming from year 2000 problems.

Similarly, UK household contents policies will not pay out if home appliances do not work, but may pay for consequential damage if, for example, a washing machine floods the home due to the Y2K problem. Travel insurers, too, would be reluctant to pay if, say, a plane could not leave the airport because of a year 2000 problem, but would still have to pay up if the aircraft exploded due to an unknown cause.

Mr Lawler, whose firm investigates and advises on business interruption insurance claims, expects most of the claims over the year 2000 to be for loss of profits. "There could also be cases of shareholders suing directors for failing to observe their duties as directors in respect of the year 2000. But some directors will be covered by directors' and officers' liability insurance if they can demonstrate that they have taken reasonable steps."

"In the US, a number of businesses have tried to sue their suppliers in advance. But so far, many judges have refused to rule in advance of the year 2000, because they can't predict what will happen." They are not the only ones.

Many Russians love using computers, with venues such as Moscow's Internet Cafe highly popular, but the government has done little to prepare for the problems of the year 2000

COMPLIANCY CASE STUDY
NASDAQ

Why a tough US customer made early moves

Guaranteeing continuity of business will be the primary focus, reports **Mark Vernon**

Since its launch in 1971, the US Nasdaq stock exchange has expanded dramatically, now processing nearly 1.5bn shares a day, or 80,000 a second.

This equates to 1,200 messages per day – none of which must be lost, corrupted or delayed – and thus demands exacting performance and reliability from the exchange's information technology infrastructure.

"We have had to scale almost vertically," says John Hickey, Nasdaq's chief technology officer. "Above all, the technology needs to be there and be responsive.

"The markets come up every day. If there is a problem, we wake up the president."

Some 450 people work in the Connecticut data centre, the heart of the IT nervous system based predominantly on Unisys equipment.

Nasdaq is a tough customer, not only because of market expectations. In August, 1994, it suffered the embarrassment of a crash.

Even though systems were back up in 22 minutes, the collapse led to bad publicity for a year afterwards and still makes Mr Hickey shudder.

The company became aware of the year 2000 problem more than six years ago. Information about the millennium "bomb" was disseminated quickly throughout the financial services industry in a culture used to knowledge sharing on matters of universal impact.

The formal Nasdaq project itself began early in 1996 with the establishment of a management office.

"The goal was to understand how to manage awareness of the problem both internally and externally, as well as how to manage the project itself," says Gregory Bailar, executive vice-president and chief information officer for NASD, the Nasdaq parent company.

"We started then so that we could also be responsive to our responsibilities within the industry as a whole." He points out that NASD also incorporates an arm that plays a regulatory role.

Senior executive sponsorship was established from the start. This ensured that the year 2000 issue was visible throughout the company and that awareness remained high.

Other mechanisms were put in place to inform the enterprise, notably a web site, clearly linked to the corporate intranet, from which project progress reports could be gained as well as more general information for external consumption.

Two distinct methodologies operated within NASD as a whole. In the Nasdaq division, the project was dealt with as part of the usual IT schedule which includes regular software upgrades and system tests.

This allowed costs to be carried within releases as well as building excellent internal knowledge of the issue.

Extra teams

In the regulatory division and within the parent company, additional teams were set up involving third party partners with internal staff dedicated to the project.

The problem was mitigated slightly for Nasdaq compared with others involved in the market, since certain date issues are not so complex for a service which closes every day. A portfolio manager, for example, has a more difficult task.

"However, we can recall virtually everything that happens on Nasdaq from our archive, and this requires data integrity to be secured across the millennium," says Mr Bailar.

The project comprised a number of steps, beginning with an assessment of the size of the task and the best ways to approach it. "Impact analysis looked inside the code, though we found very few tools which were relevant to what we were doing or had been developed for the Unisys environment," he says.

Details of the methodology included establishing test parameters, processes to link one remediation with the next, definitions of certification and recertification and governance, including regular reviews at board level.

"We also had to communicate with members and attend to our regulatory responsibilities," says Mr Bailar. "This not only includes a hotline, but outbound calling to assess members' year 2000 status and that of their partners."

In fact, at the time of writing, this work is absorbing more project time than attending to code itself.

Testing was a crucial element with certification operating at three levels. First came the testing of individual applications alone, then the testing of whole environments, including databases and networks. It was only at this stage that compliance could be secured.

A third level of testing proved vital, too: the recertification of systems to ensure that reinfection had not occurred.

"About three months ago, we received a shipment of PCs which our retesting procedure found was not compliant in spite of labels declaring the contrary on the boxes," says Mr Bailar.

Recertification forms part of the contingency planning. From October, 1999, there will be a freeze on new implementations which will also free resources. Contingency plans include assistance for members. "We want to help if a firm has a problem, too, to ensure the market stays up, so we are training in-house staff to go out on site should anything happen," he says.

Guaranteeing continuity of business will, in fact, be the primary focus for 1999. "This is an enormous amount of work which has to be galvanised around the world. It is a truly global effort," says Mr Bailar.

"Rather like the space programme, the year 2000 has undoubtedly infused a significant amount of new investment in IT and witnessed unprecedented co-operation between parties.

"Its effects, beyond the bug, will be felt long into the new millennium."

DISCLOSURE

Investors demand more than bland answers

From previous page:

"This will no longer wash," says Mr Rigby.

The prospect is that stock exchange authorities around the world will follow the SEC and increasingly insist that companies make full declarations on the subject.

The SEC wants companies to state how much money and time they are spending on fixing the bug, how far they have progressed and when they will finish, what their contingency plans for systems failures are and what effect, if any, is expected on their trading position.

Mr Levitt's letter made the authorities in some other countries, including the UK, look again at their position on extracting statements.

The British government and the London Stock Exchange have been very concerned about the blandness of companies' statements and have been considering what more they can do to induce disclosures.

"People want to know how seriously this is being taken by these organisations and what is being done about their external contacts," says Alan Cook, a director of the Accounting Standards Board.

As well as stock market authorities, regulators for particular market sectors may intervene to add to the pressure on company directors.

For example, the UK's Financial Services Authority has said it will call for an auditor's report if it is concerned about a financial institution's readiness.

The crucial period could begin in December, when many companies' interim reports are due. Investment analysts will be scrutinising the statements of boards on their strategy and will be posing questions at annual meetings if they are not satisfied. They will not want to be surprised by profits warnings being issued due to higher year 2000 conversion costs than anticipated.

If investors do not receive replies which put them at ease, they could start to sell their shares. This could force companies to make statements in order to halt the selling.

Mr Rigby speculates that if companies fail to quell the worries and selling accelerates, the stock exchange could ultimately be forced to suspend trading in their shares until the situation is sorted out.

By May, when there will be a large number of full year reports, investors will want to hear that the problems are all in the past.

It seems likely that through next year investors will increasingly make decisions taking into account who they trust to handle the year 2000 issue effectively.

BANKING CASE STUDY
CARIVERONA OF ITALY

Integration with other groups presents a big challenge

The imminent introduction of the euro and problems associated with the millennium take pride of place, writes Geoffrey Nairn

Italian banks pioneered the development of modern banking in centuries past. But their IT managers today have little time for reminiscing.

They are too busy adapting their systems to handle the imminent arrival of the euro, the wave of mergers in the sector and, of course, the millennium "bomb".

Claudio Bari, deputy IT manager for Cariverona, a mid-sized bank based in the northern city of Verona, is fortunate in that he has one fewer item to worry about.

This is because the bank completed the bulk of its year 2000 work at the end of 1997.

"We wanted to be able to work on the Y2K problem without jeopardising our other work such as the euro project," says Mr Bari.

The single European currency is seen as a powerful new opportunity by the bank and work is already well advanced in this area.

This summer, for example, it adapted its IT systems to print an extra column on all customers' statements giving the value of their transactions in euros as well as liras.

The bank also faces big IT challenges in other areas. Along with many other banks, it is eager to exploit new opportunities in home banking and e-commerce.

It recently announced an agreement with Visa to offer its customers digital certificates based on the Secure Electronic Transactions standard.

Perhaps the greatest technology task facing the bank is integrating its systems with those of the other four groups that recently combined to form Unicredito Italiano, Italy's third largest financial institution.

Italy's banking industry is notoriously fragmented and Cariverona is itself the result of several mergers. It comprises 445 branches in seven regions of Italy. Its information processing is handled by an IT centre with 200 staff that can process up to 5m operations a day and provides services to some of the other banks in the Unicredito group.

The creation of Unicredito Italiano is the latest in a long line of consolidations in Italian banking. But for the promise behind such mergers to become reality, the partners must weld together their disparate systems so economies of scale can be achieved and processes streamlined.

Euro project

The systems integration work has already started but will not be completed before 2000. Because of these and other business challenges, Cariverona was keen to get the Y2K problem resolved sooner rather than later and long before its euro project moved under way.

"At the end of 1995, we knew we had to modify our systems to make them Y2K compatible but the problem was we did not know how to do it," says Mr Bari.

As with many banks, Cariverona is heavily dependent on IBM mainframes and the Cobol programming language. The bank estimates that 90 per cent of its programs were written in Cobol. "It is important to have a detailed inventory of your programs because, depending on the languages used, the scale of the Y2K problem varies considerably," says Giuliano Malfato, who heads the Y2K project at the bank.

Most Cobol programs are quite old, which means they are likely to be most vulnerable to the Y2K problem.

But Cobol is also the market that most Y2K tools vendors address, so the problem is in some ways easier than for more esoteric programming languages.

After an analysis of the Y2K problem in 1996, Cariverona handed the task over to an external contractor to reduce the workload on its own IT staff. But most contractors balked at the tough deadline imposed by the bank, which wanted the majority of the conversion completed by the end of 1997.

Cariverona started a pilot conversion project involving 100 applications using conversion tools to produce new program code "cleaned" of Y2K bugs. But Mr Malfato says this approach, based on a technology called "date field enlargement" would have taken far too long. With this approach, each piece of program code that contains a reference to a year is expanded from two to four digits. From a technical point of view, experts see this approach as preferable, but it is time-consuming and costly as up to 90 per cent of all programs may need to be changed and then retested.

Instead, Cariverona opted for an alternative proposal put together by Siemens Nixdorf of Germany and a local partner which promised to do the job much sooner.

The technology employed is called "time windowing" and has the advantage that only 10 to 15 per cent of programs need to be changed.

This is because only calculations involving dates are analysed and checked for validity, so the actual two-digit representations of years stored in the program remain unchanged.

This windowing approach also allowed the conversion to be largely automated, so manual intervention was minimised.

This enabled the bank's 30,000 programs to be converted in five months.

But it realised that its Y2K effort had to be continuous. At Cariverona, around 200 programs are modified in some way every day.

Therefore, even if the bank's programs were all certified Y2K compliant on a given date, there was no guarantee that they would remain so.

To take account of this the bank set up a "repository" in which all the date references and their interrelationships are stored. If a program is modified the changes and their effects can easily be tracked.

Mr Bari says the repository has the advantage that once it has been created, it can also be used for other purposes such as the conversion to the euro which the bank now sees as its most pressing challenge.

"The euro is a totally different issue but, thanks to the Y2K project, we have created a repository that allows us to also handle the euro easily," he says.

DANGEROUS DATES by Mark Vernon

Why ships could be all at sea when clocks tick away

The turn of the century may not be the only date which could cause headaches for the unwary

Crews will be watching anxiously to see if their navigation systems are disrupted by date changes

What use would be a computer that counted backwards? Strangely enough some do, and they might make themselves known on January 1, 1999, as a foretaste of the main year 2000 shock.

These machines determine the date beginning one year hence, counting backwards to the correct day. On the first day of 1999 they could see "00" as they look forward and, like a child at school, trip and stumble at the thought of counting backwards from nought.

This is another example of the threat which the unlikely aggressor, the computer clock, poses to the unwary. And as awareness of the millennium "bomb" has grown, so the world has become aware of the arbitrary dangers of a number of other "doomsdates".

One of these occurs in August, 1999. For the clocks inside the 24 satellites orbiting the earth which form the Global Positioning System, this month marks a turning point. These clocks have been counting the days since their launch in 1980, rather like the mileage gauge on a car. And next August 22, the counters will roll back to where they started as the week number transmitted in the satellite navigation message moves from 1023 to 0.

This will not cause any internal glitches, unlike the computer which crashes because of a Y2K conflict. But back on earth, earlier receivers of GPS information might not be able to correlate geographical location and time correctly and that would puzzle navigational systems on ships, for example. "This is not a satellite problem but a data encoding problem," explains Graham Collins, proprietor of UK-based Effective Solutions, a GPS vendor. "More modern GPS systems do take account of it."

But, since the word modern here could mean receivers made little more than a year ago – Garmin, a US manufacturer, released a statement only last year saying current models would have no problems – this could turn into a vital issue.

Mr Collins has noted a rise in demand for simulation software and expects concern to rise as August approaches.

September 9, 1999 is also reported as one to watch. Some computers might record this date as 9999, which is also a default figure for the date fields in certain applications. Other machines could interpret 9999 as an "end of file" command. Would a computer coming across a row of nines in the midst of the code simply come to a halt?

Lindsay Marshall of the computer science department at the University of Newcastle who chairs the UK Unix user group is sceptical of this portent.

"I find it hard to conceive of anyone storing dates as ASCII text [the basic computer character code]," he says. "Unix has – and always has had – a proper end-of-file command that is perfectly good. This sounds like an old card trick. Proper Unix programmers would not do it."

Even if some rogue developers were to sign their work in this way, they would be much more likely to use a row of zeros which would represent a date long past, January 1, 1970.

However, Dr Marshall is

Continued on page 13

SOFTWARE TOOLS by Philip Manchester

Lessons learned the hard way

While many accusing fingers point to the software industry, user organisations must accept some of the blame for short-term design decisions

It is too late to start allocating blame for the problems caused by the year 2000 date change. But there can be little doubt that the software industry must shoulder at least some of the responsibility.

According to latest figures from Cap Gemini's millennium index, the cost of fixing software to forestall year 2000 problems will be about $200bn – 23 per cent of the estimated total global bill of $858bn. The final cost could be much higher. It has already risen by 12 per cent from $179bn since April, 1998.

Computer industry supporters are, of course, quick to defend the lack of prescience by programmers with clichéd explanations about the lack of storage space in early computer systems or that the software was never expected to last as long as it did.

User organisations must also accept some of the burden for short-term design decisions and not insisting on an earlier solution to the year 2000 problem. It was, after all, an entirely predictable event.

There is, however, a positive side. Software builders, and those who supply them with the tools to build applications, have recognised that, while year 2000 problems are unique, there are other potential problem areas they must allow for.

The software of the future must, therefore, be built in such a way that such problems will be solved more easily and less expensively.

"I am not sure the year 2000 problem could have been avoided in the mainframe area, given the state of the early software and the hardware it had to work on," says Tom Depasquale, senior vice-president of information management at Platinum Technology, the US software products company.

"Software had to be written that way just to get it to work. Most people, of course, took that early code and modified it to extend the useful life of their systems – and that's how the two-digit year happened."

He is less happy with PC suppliers and software developers, however. "When you look at what has happened with the PC, it is far less excusable. The industry should have taken a bigger responsibility and we would have avoided some of the costs."

He adds, however, that hardware technology advances and a greater understanding of the software development process should make sure there will never be a problem on quite the same scale as the millennium change.

"The industry has changed and there are a lot more people out there keeping an eye on what we are doing," he says.

"Coding techniques have improved and programmers don't need to worry about the hardware performance and storage sizes like they used to. I think it has also taught us to build more defensive software codes, on the basis that whoever wrote it will not be around when it needs changing.

"There are other dates, of course, and changes to telephone numbers could be a problem. There is also the euro, which I think could be more difficult."

Improvements

While it is true that, generally, today's software is better designed and more reliable than previously, there are some who see this as only a starting point to improve software production techniques. Better training and accepted standards are also important.

"There will certainly be other 'time-bombs'," says Reza Mikailli, chief executive of Unify, a US software tools and database company.

"But I think year 2000 has taught us a couple of valuable lessons. Firstly, those concerned with building applications need proper training in a methodology to avoid design and coding compromises. And secondly, we need open standards for building software components."

He says that, had companies followed a formal development methodology, they would not have a year 2000 problem in the first place – and they can ensure they are ready for any comparable problems in the future.

"The combination of following a development methodology and using more component-based software will certainly minimise the impact of a change like year 2000," he adds.

Development methodologies lay down the disciplines for a development project and enforce long-term design standards.

Originally associated with computer-aided software engineering tools in the early 1980s, methodologies are now usually linked with high-level "object" modelling tools from companies such as Sterling Software and Rational Software.

Component-based software fits the engineering approach to software development well. It breaks software systems down into sets of self-contained components that can be brought together in different combinations to support different applications.

More important, like sub-assemblies in manufacturing industry, software components can be reused in other applications.

The shift to component-based software systems is well under way. Most infrastructural software – operating systems, database management systems and so on – and leading application products have been built using component "objects" for several years.

The practice is gradually spilling over into the development of software applications. IDC, the market researcher, notes, for example, that revenues from object-oriented development tools will approach $4bn by 2001.

Increased use of standards such as Object Management Group's Corba and Microsoft's Active X will also accelerate the trend.

"As we see the growth of re-usable objects or components, and wider use of packages such as SAP, the possibility of something like this catching us out in future is unlikely," says Mr Depasquale. Computer users everywhere will hope fervently that he is right.

SOFTWARE 'FACTORIES' by Geoffrey Nairn

Special help for those with Y2K computer date fears

Seeking assistance outside the company to solve year 2000 IT problems can save time and money, but it may not be the right solution for all businesses

With the millennium deadline looming and internal resources strained, many organisations are tempted to turn to an external "Y2K factory" to help fix their year 2000 programs. But as some have found to their cost, this option can create more problems than it solves.

At first sight, there are obvious benefits in delegating some or all of the Y2K remediation effort to an external contractor with a specialised centre, or "factory", dedicated to fixing millennium date problems. For example, some companies may not have sufficient IT staff for the task, or they may lack the specialised tools needed to inspect, fix and test code.

"One of the best ways to get around the resources shortage is to use tools to increase productivity," says Chris Webster, head of Y2K services at Cap Gemini, the computer services company. Cap Gemini has 21 factories that have renovated more than 300m lines of program code for hundreds of organisations worldwide.

The services offered range from checking and analysing the level of "date infection" in an organisation's programs right through to a fully automated renovation service. A Y2K factory, by definition, has staff with greater expertise in handling the Y2K problem and a variety of the tools needed to inspect and fix even the most esoteric programming languages and thus achieve higher levels of productivity and throughput.

By using an external factory, an organisation thus saves having to purchase its own Y2K tools and having to train staff to use them. Another issue is that the impact of the Y2K problem is usually greatest on older "legacy" programs written by programmers who have long since left the organisation.

"Y2K requires you to make a significant investment in old skills," says Ian Baker, Y2K manager for IBM's European operations. Few in-house IT staff relish the prospect of looking for bugs in decade-old programs, so by offloading the Y2K work to an external contractor, internal staff can concentrate on more interesting work and the money saved on licences for special Y2K software tools can be used for more strategic purchases.

One of the principal benefits of using a Y2K factory is its formalised "factory-like" process that is ideally suited to the highly repetitive tasks involved in analysing and fixing millions of lines of program code. Experts say organisations with more than a million lines of code should seriously consider using a Y2K factory simply because of the problems of managing a project of this size internally.

Fingers can be burned on Year 2000 projects

"For this type of project, you need to be very disciplined, yet a lot of companies, when they try to do their Y2K work internally, do not treat it as a normal IT project," says Paul Gosling, European Y2K project director for US-based Unisys. "Y2K is a high risk project on which to burn your fingers."

Unisys has created a chain of 10 "migration factories" in various countries that offer an industrial-style specialisation of function similar to a conventional manufacturing factory and a set of well defined processes and disciplines.

One of Unisys' largest Y2K projects is for Abbey National, the UK bank; it centres around a software factory built and run by Unisys in Milton Keynes. This uses a highly automated production line with specialist work cells at each stage of the Y2K compliance process.

The project, which started in early 1997, involves 14m lines of code written in 16 different computing languages and should be finished for the end of 1998 at an estimated cost of over £30m. At its peak, 330 staff worked on this project.

IBM has created a network of 23 "renovation factories" around the world of, which nine are in Europe. The latter have completed 2,900 Y2K projects. Like several other players in the Y2K industry, IBM has sited some of its renovation factories in countries with lower labour costs, such as India, Belarus and Pakistan.

The "offshore" software industry was quick to spot the opportunity that the millennium "bomb" offers, as the cost of doing the labour-intensive tasks involved in Y2K work is considerably less in developing nations up to 50 per cent cheaper, according to some industry experts.

Offshore Y2K factories also help solve the year 2000 skills crisis as programmers skilled in older programming languages are in short supply in many developed economies. But some organisations that have sent Y2K work offshore have found it is not the cure-all that it first seemed.

"We have had to deal with clients who have sent program code offshore that comes back and contains quite significant flaws," says Mr Gosling of Unisys. He knows of cases where date references were missed in the original code – and thus remained susceptible to the Y2K "bomb" – and where remediation work had been done badly.

Dealing with distant software houses

"Y2K work can be done well offshore but you really need to understand how to make it work," he says. There are special challenges in dealing with a software house that may be on the other side of the world. The most obvious one is managing the project and, in particular, the logistics of shipping code back and forth.

"The idea that you can throw code over the wall, fix it and then ship it back simply does not work," says Mr Baker of IBM. Another challenge is the security risk. The US Central Intelligence Agency fears that US companies, in their rush to fix the Y2K problem, are sending not only their bug-ridden code offshore but also commercially sensitive information.

The security and project management challenges are highest when using an offshore Y2K factory but they are also issues to consider when using Y2K factories located closer to home. Yet whatever the risks of using Y2K factories, some organisations may have little choice. With less than 13 months to go before the new millennium, analysts warn that those late to start Y2K projects may miss the deadline if they attempt to do it all themselves.

Digital technologies allow more people to work from home offices. In the US, Barbara Casey, above, holds her son, Patrick, while working in her home office in Naperville, Illinois. A book by Sally Helgesen, called 'Everyday Revolutionaries, Working Women and the Transformation of American Life' features Naperville as a "typical US suburb" and examines the stresses of working from home AP

Equipment buyers spoiled for choice

With information and communication technologies converging rapidly, consumers face an exciting array of products and services, writes **Paul Taylor**

A digital whirlwind is reshaping the traditional computing, communications and consumer electronics industries. It promises unprecedented choice for consumers and business users in a new multimedia-rich world of information, education and entertainment.

Nowhere is this revolution more obvious than in the home and home office where the convergence of the "three Cs" is creating new opportunities and challenges both for the suppliers of products and services, and the users.

In particular, the distinctions between types of device – for example personal computers, set-top boxes and intelligent phones – are becoming blurred, as are delivery mechanisms including cable, wireless and satellite.

In Hanover, Germany, a visitor at CeBIT, the world's biggest computer show, examines the keyboard of a personal computer. More than 7,200 companies exhibited at the event this year AP

"Convergence of the IT, telecoms and broadcasting industries – made possible by developments in digital technologies – means that many different organisations are positioning themselves to provide multimedia products and services to the home and business," says Ovum, the London-based market research firm.

For the home office user, this means that a single PC can now function as a high speed gateway to the huge resources of the Internet for research, as an e-mail and fax communications tool and as a means to market and sell products or services using electronic commerce.

What is more, given the global reach of the Internet, the small business user can contact and conduct business with partners and customers on the other side of the world, just as easily as if they were on the other side of town.

Web-publishing software from Microsoft, SoftQuad and other companies makes it easy to create web pages and then upload them to an Internet Service Provider's hosting site. By adding a digital camera – which now costs little more than a traditional 35mm SLR – or a page scanner high quality images can also be added.

Setting up for e-commerce

Today, it is possible to set up a complete electronic commerce-enabled small office or home business using just a basic PC, modem and ISP account. Typically, however, a home office buyer should specify a machine with plenty of power and expansion capacity.

With PC prices continuing to tumble, a brand name PC complete with 366Mhz Intel Pentium II processor, large 9Gb hard disk and 56Kbps modem can be bought for $1,000 or less in most markets.

A colour inkjet scanner will cost another $150, although a growing number of home office users are opting to purchase multifunction devices which, for example, combine the operations of printer, fax machine, copier and scanner in a single machine costing perhaps $600.

If large files are going to be transmitted, or lots of time will be spent on the Internet, most small business users should also consider investing in a high-capacity digital communications link. In most places in Europe, the easiest option may well be an ISDN (Integrated Services Digital Network) line supplied by the local telephone company.

ISDN lines can transmit and receive data at rates at least twice as fast as the fastest analogue modem. However, even faster options are just around the corner.

Among the high bandwidth technologies which are likely to be deployed over the next few years are cable modems and ADSL (asychronous digital subscriber line) devices, both of which offer substantially higher capacity than ISDN lines.

The launch of direct satellite services like the DirectPC service in the UK, which use rooftop satellite dishes connected to PC-card adapters manufactured by companies such as Adaptec, provide another option.

These super-fast digital delivery systems are capable of delivering broadband multimedia services including rich web content and high quality video-conferencing direct to the desktop, and they could have serious repercussions for existing distributors.

Internet telephony and e-mail are challenging traditional telecoms business models, while web television and "push" technologies are forcing broadcasters and information suppliers to reassess their strategies and embrace new technologies.

In the home, web television, smart phones and low-price computing devices such as set-top boxes and network computers could herald the arrival of the digital networked home. Ovum believes NCs are significant because they are part of the convergence between the TV and computer industries and also because they enable new services to be developed. "NC's could provide the 'bridge' between the competing aspirations of the television and computing industries," says Ovum.

Digital radio and television broadcasting also represents an exciting new opportunity. Over the past two months, mass market digital satellite television has been launched in the UK and digital terrestrial television has made its world debut.

Some industry experts like Ed Straw, a partner with PricewaterhouseCoopers' consultancy practice in London, believe this could usher in a "platform war" between digital cable, satellite and terrestrial services. Each platform has its benefits and its drawbacks, he says. Overall, it could be an even race.

In the longer term, internet or telecoms delivery is another potential platform competing directly, although the indirect competitive threat, in terms of competing for screen time, is already here, said Mr Straw.

FT IT

The small office, home office market

Here and on the following two pages, FT writers highlight advances in digital technology for the 'SoHo' sector

Digital television

Nevertheless, most industry analysts agree that digital TV – delivered by whatever means – has enormous potential. "Digital television will change the way we shop, the way we bank and the way we use information and entertainment," says David Coverdale of Pace, the UK-based electronics group, one of the main suppliers of the set-top boxes required to receive the new satellite, cable and terrestrial services.

However, forecasts about the uptake of digital TV, which is already available in many parts of the world, vary sharply. According to the Digital TV Worldwide 1998 report, prepared by Market Tracking International, the global audience for digital TV is forecast to reach 58.5m by 2002, seven times the estimated 8.4m digital subscribers at present.

John Clements, chairman of Continental Research, the new media research specialist, writing in a recent report from Pace on UK consumer attitudes towards digital television, says digital TV offers a totally new form of TV in the future. "TV that goes beyond the bounds of entertainment into providing personally relevant information and opportunities. Post 2000, it will change the face of TV and the ways in which users interact with their TV sets." But he adds: "It will not happen overnight – it will be a gradual process."

Amid the bustle of the Comdex trade fair in Las Vegas, IT vendors are keen to boost their business from growing firms with big ideas and a need for solutions and advice

SMALL BUSINESS COMPUTERS by Christopher Price

Tempting PC offers for companies willing to spend

The potential market is huge, but support and advice are essential in winning over smaller businesses

For Europe's small- and medium-sized enterprises (SMEs), there has never been a better time to buy a personal computer. Not only are prices continuing to decline, but manufacturers have also woken up to the potential of the market and have launched a series of initiatives designed to support businesses.

Analysts' estimate of the SME market for PCs in Europe vary, but the number of units sold last year was around 5m. This would indicate a market worth around $8.5bn. PC suppliers' interest is, therefore, hardly surprising.

"The SME computer market is without doubt one of the most exciting areas for us," says Jan Gesmar-Larsen, president of Europe, Middle East and Africa for Dell Computer, the US manufacturer. Dell is currently selling $2m worth of PCs a day in Europe, double the amount of three months ago; thios accounts for a fifth of its total sales.

The company has taken the PC market by storm over the past three years by using the Internet to drive its direct sales strategy. It has now targeted the SME market as an area with strong growth potential, setting up a new virtual European service and support centre to underpin the initiative.

However, Eric Schmitt, an analyst with Forrester Research in the US, believes one of the key challenges being faced by PC suppliers is the demand by SMEs for greater support. "They see fewer and fewer differences between the various PC models and are putting more emphasis on advice and hand-holding."

For Dell, which has eschewed a dealer network in favour of direct sales, this could prove a distinct disadvantage, particularly as SMEs are renowned for preferring to use local suppliers.

Mr Gesmar-Larsen believes the Dell business model is well able to deal with the situation, pointing out that 85 per cent of its customer queries are dealt with over the telephone. Customers can also deal with Dell through its web site, with the European version having recently launched a new service initiative.

He also disputes the amount of face-to-face hand-holding that SMEs require, arguing that a large proportion are buying their third or fourth generation PC and are comfortable with trouble-shooting on the web or by telephone.

Jacques Heynen, SME manager for the region for Hewlett-Packard, the US computer manufacturer, believes that the trend towards more support is not a reflection of SMEs' ignorance of technology, but rather a desire to be supplied with a solution to their computing requirements, rather than individual products.

"They are looking to us to provide the right tools for their business, not just the hardware."

HP launched a global initiative a year ago to target the SME market. Its Spotlight strategy provided additional training and support for HP dealers as well as the launch of products specifically aimed at the SME market.

In Europe, this meant providing additional resources to 11,000 out of the European dealer network of 60,000. The result has been a rise of 40 per cent in PC sales and 10 per cent in printer sales to SMEs. The Spotlight programme was based on the findings of a poll commissioned by HP to discover which barriers SMEs perceived as preventing them from buying, or upgrading their, computer systems. Three key features emerged:

- *Fear of obsolescence.* Many companies were reluctant to invest in new technology because of concerns that it would be quickly overtaken by developments.
- Need for solutions. There were also concerns that individual technology purchases alone were not sufficient to provide the answer to a company's technological requirements.
- *Proximity.* Many companies preferred to conduct business with local suppliers and were reluctant to become involved with suppliers at a distance.

To encourage businesses to buy the latest equipment, HP introduced "E-finance", a scheme which enables them to update their technology, either at a reduced cost or free of charge. HP also addressed the need for solutions by forming partnerships with software vendors to provide as many applications with the PC as possible.

Mr Heynen also points out that HP is able to offer SMEs an integrated package of PC, printer, scanner and fax.

Finally, HP has introduced its Brio range of PCs aimed at the SME market. Patricia Rubio, who heads the Brio division in the UK, says the range has been designed to be both price and product sensitive in order to address the wide range of businesses within the SME market. Thus in the UK, Brio PC prices start from as low as £600 ($1,000).

However, while low prices are good news for businesses, they are a worrying trend for the manufacturers. Forrester's Mr Schmitt says that the sub-$500 PC is likely to be on US shelves before Christmas, with European prices likely to follow swiftly behind.

With greater support, more targeted products and lower prices, the outlook for SMEs looks likely to continue bright.

DANGEROUS DATES

More trouble ahead

From page 11:

not saying that the problem will not happen, only that it is very unlikely.

Even when 2000 has been reached, and the millennium "bomb" has been fixed or the damage undone, the hassle may not be over. Two aftershocks could be felt during the year.

These are both associated with the fact that 2000 is a leap year, though an odd one at that. The rule for determining whether a year is a leap year is that it is divisible by four, but not by 100.

Except for 2000. The extra test that should be applied is that years divisible by 400 are leap years, too.

The question is – how many programmers have realised this? Two scenarios arise for those who have not. First, February 29 might be skipped. Secondly, a computer which counts the days of the year to work out the date will read December 30 as day 365 and so believe that 31 December is January 1, 2001.

Missed leap years have caused problems in the past. In 1996, a computer in an aluminium smelter in New Zealand shut the plant down a day early at the turn of the year. The furnaces solidified as the metal cooled inside them and cost the company millions of dollars to clean up.

The Belgian stock exchange suffered a similar embarrassment when trades were recorded on the wrong of carelessness, simply forgetting about leap years in system code. But it might be erroneous to believe that year 2000 fixes have dealt with the problem.

"The leap year issue should be a standard check and thereby eliminated," says Robin Guenier, director of Taskforce 2000, the independent UK advisory group. "But you can't tell where someone is going to miss it.

"Some inevitably will. The only thing that matters is whether these are important or not."

Once 2001 has arrived, the impact of rogue Unix programmers might be felt again. The ASCII representation of September 8, 2001, is 999,999,999, another possible end-of-file command or Unix's very own millennium "bomb" a few months late. Users must hope that Dr Marshall is right.

Taking a look into the more distant future, 2038 is another year to watch. Some developers are already talking of the Y2.038K bug.

The problem here is for any program language that counts time in seconds from January 1, 1970. This includes Unix and also others such as C and C++.

Some time in the early hours of January 18, 2,147,483,647 seconds will have passed since the counters began and they will flip back to zero as that is the largest number that can be stored in 32-bit systems.

"This is a much harder problem," admits Dr Marshall. "One answer will be to have 64-bit machines by then."

Hal Hovland, of Financial Objects of the UK, has tested machines up to 2100 and noted that many would crash in 2038. "However, it won't affect calculations themselves," he adds, thinking of, say, long-term financial instruments.

"The IT problem only occurs when software is running on the date or beyond."

By then, doomsdates should be confined to the history books. But it would be wise to remember how the year 2000 problem arose.

INTERNET SERVICES by Mark Vernon

A discerning eye is essential

Quality of service is the most important factor in selecting an Internet service provider for the smaller office

The hosted Internet economy is set for substantial growth, being projected to reach $85bn by 2001.

But today, it takes a discerning eye to see the wood for the trees when choosing which of the proliferating Internet Service Providers is best suited to provide anything from basic Internet access via a dial-up modem to a full service of outsourced intranets and extranet.

It is, perhaps, the small to medium-sized businesses which have the worst of it. Without the benefit of long-standing, evolving relationships with large IT groups, they can be swamped in a sea of offers with few criteria upon which to decide which ISP can best support their needs.

One UK business, the Denby Pottery Company, first investigated what benefits the Internet could bring through a dial-up ISP account.

This minimal investment soon proved that the Internet was invaluable to the IT department for technical information, to the marketing people for researching customers and as a communications tool using e-mail.

But it also quickly became clear that upgrading the system to a leased line would be necessary to roll out the advantages across the company.

"We collated details of ISPs from the trade press and wrote to them with details of what we wanted," says Mark Allcock, technology manager.

"We wanted an e-mail system that integrated with our internal system, controlled web access for a few, a web hosting facility and remote dial-up connections for the sales team."

However, only a few ISPs replied with anything more than a standard information pack, which Mr Allcock immediately discarded. Some others tried to oversell services. A short-list was drawn up from the few which talked to Denby about what it wanted and submitted proposals.

Exploring the technical support these would provide was important, as was ensuring that they would not add hidden charges, say, for updating web pages. The company which designed Denby's web site helped at this point with mock out-of-hours support calls to the candidate ISPs.

"On these criteria alone, we were very quickly able to choose just one," says Mr Allcock. That was PSInet.

"The important thing is to be professional in approaching ISPs and think carefully up front about what you actually want," he adds.

This point is taken up by Nick Gibson, Internet analyst at Durlacher, a UK research company. "For example, if you can survive without e-mail for say half an hour a day, virtually any ISP will do," he says.

"But if you need guarantees of up-time and speed, service level agreements become a very important factor.

"A first element in any service level agreement will be guarantees of the time in which technical problems are solved. Downtime limits on leased lines will also be set to protect loss of revenue.

A number of the larger ISPs now offer compensation if a service is off for three hours a month or more, which represents a 99.9 per cent up-time.

Speed of data transmission or latency guarantees may also be sought, but these can be hard to define or enforce.

"There are a number of complex factors involved in Internet performance of which no one organisation will have control," says Mr Gibson. "Further, you need an auditing process to see whether a line goes down or is slow, and that can be hard to implement."

This advice would tend to suggest that the larger ISPs are a better bet – the 10 per cent that actually own networks. "These companies have better control over what is going on," says Mr Gibson.

"Further, they might be able to offer more flexible bandwidth and so cope with sudden increases in traffic."

However, this is not necessarily the case. The ISP market is relatively immature, and general rules might not be a good guide to the quality an individual company will provide.

For example, contrary to the advice to go with a larger ISP, Chelsea Football Club uses Direct Connection to support a very successful web site.

"When the site was launched it was with IBM's ISP," says Jack Manthorpe, multimedia editor for the London club. "But the site became popular and their rates were too high for the bandwidth we needed."

Mr Manthorpe assessed a number of ISPs in the market place to look for an alternative. These included VirginNet, with which the company already had a relationship for certain online activities.

Direct Connection won because they could offer guarantees to match the bandwidth demand. The fact that their hub is located in Telehouse, the main UK Internet exchange point, assists performance.

Also, the ISP was willing to enter into a financial deal with Chelsea, under which each has links to each other's web services.

"There is still a substantial amount of money involved," adds Mr Manthorpe. "Chelsea is not short of cash."

All in all, quality of service is the most important factor in choosing an ISP. "Smaller companies are entitled to that too," says Nick Jones an analyst at IT research firm Jupiter.

But some special considerations apply. "Don't be caught out by a large growth of traffic," he says. "Many ISPs provide a 'burstable' service [to cope with demand surges], but they may only lay on extra capacity at extra cost.

"Good relations with the ISP are vital so they can move with you as you develop the site. And beware of being charged for services which are free elsewhere."

Finding the best way to gain access to the Internet is not easy. Adequate support is vital for online business AP

MULTIFUNCTION MACHINES by Joia Shillingford

Versatility is at a premium when office space is tight

Devices which combine several functions in one handy unit are falling in price but users must work out what is best for them

Machines that can copy, print, scan or fax are becoming cheaper. They are ideal for the small or home office because three or four devices are compressed into the space of one.

Multifunction devices on the market include models from Canon, Brother, Hewlett-Packard, Oki, Pitney Bowes, Sharp, Toshiba and Xerox. Some MFDs are a combination of inkjet printer and other functions. Others are built around laser printers.

Prices for a multifunction machine with a laser printer, office-quality plain paper fax, copier and scanner, such as the Hewlett-Packard LaserJet 3100, come in at around £500.

Hewlett-Packard is also introducing a £380 printer-copier-scanner with multilingual optical character read software from Image Recognition Integrated Systems, a Belgian company, that increases the accuracy with which documents can be scanned.

An inkjet model aimed at the small office/home office market, such as Samsung's SmartJet costs just under £300including value-added tax. This combines a colour printer, fax, copier and scanner.

Samsung's range also includes the SF4500C launched last month at around £400 – designed to cope with the demands of the busy small to medium office – and the SF6100 aimed at the corporate market.

Brother has launched a six-in-one multifunction machine, the MFC-9550, for under £600, offering laser faxing, printing, copying, plus message management, PC-faxing and scanning.

Many multifunction devices can be used to print scanned-in photographs and a number can be used as network printers or local-area network faxes. Machines such as the 3100 and Sharp F-3600M can also be used to send faxes directly from the PC.

Anyone wanting to photocopy bound books or reports, should look for a model which has a flatbed scanner/copier, so that it can be opened up and the book put on top. Models such as these are available from Pitney Bowes and Hewlett-Packard. Otherwise, most multifunction machines are designed to scan or copy single sheets of A4 (or smaller) inserted into a slot.

One of the biggest advantages of multifunction machines is that, because they are designed very much with the consumer and small business in mind, they often come with better instructions than information technology companies' other products. For example, Hewlett-Packard's LaserJet 3100 comes with a very clear set of instructions.

By contrast, the same company's dedicated small business LaserJet 6P printer does not even include a cable, and does not point this out until several pages into the installation manual.

Other advantages of MFDs include price, size and convenience. They are cheaper to buy than three or four separate machines. They take up far less space. And only one purchasing decision is needed.

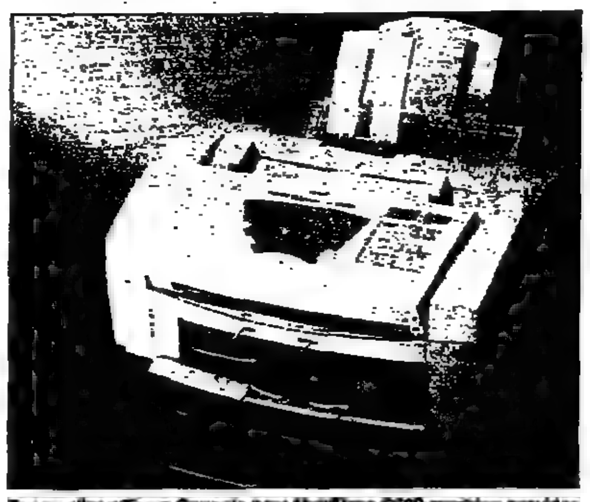
Samsung believes the market for multifunction devices will increase 100 per cent a year, with 75 per cent of growth expected to come from the small office/home office market.

However, MFDs do have some drawbacks. Deborah Sauer, vice president of marketing at Pitney Bowes, the US-based facsimile company, says: "Just because certain types of functions have been added [to an MFD] doesn't mean they've been implemented in the best way. You have to have a clear idea of your main business application.

"If you mainly want a printer, with added features, then certain types of machine are good for that. If you are a heavy fax user, MFDs don't always offer the highest modem speeds or the higher quality error-correction modes."

Friedman Wagner-Dobler, an IT consultant, also points out that "you will also need quite a bit of space on your PC for the software that comes with the multifunctional device".

Multi-function machines are excellent for home users, adds Ms Sauer. "But in a very busy office you don't want to wait for someone to finish an urgent photocopying job before you send a fax."



For smaller offices: Canon's new MultiPass C500 machine provides full colour printing, colour scanning, copying and high speed faxing. The price in Britain, excluding VAT, is £546

Popular choice among smaller business users: Brother's six-in-one colour multifunction machine, the MFC Pro-700C, sells in the UK for around £649

OFFICE CASE STUDY
UNDERGROUND MOLING SERVICES

A space-saving solution

Underground Moling Services, a small civil engineering company based at Falkirk in central Scotland, recently swapped a separate fax, printer and copier for a multifunction fax.

Jim Morrison, the company's director, has a dedicated home office which he mainly uses out of hours because his business takes him out of the office during the day.

His company, formed in September, 1995, specialises in installing pipes and cables for local authorities and as a sub-contractor. The technique used is to bore underground rather than dig large holes or trenches. Mr Morrison's office used to include a personal computer linked to a mono inkjet printer and wide-carriage dot-matrix printer, a thermal fax machine on a dedicated phone line, a personal copier and a phone line with handset and answering machine.

The main limitation of this arrangement was that machines were taking up lots of desk area, shelf space and power sockets. Another problem was that long, detailed faxes often used an entire roll of paper, were of poor quality and had to be photocopied before they faded. Printing out long documents could be slow and the company had to keep lots of paper files because it was not able to scan documents or drawings into its PC.

Underground Moling has now installed a multifunction machine from Sharp Electronics which can fax, print, copy and scan. This is located where the inkjet printer used to be and the thermal fax machine has been disposed of.

The photocopier is still needed for larger or bound documents, but can now be stored elsewhere in the house.

"This has removed two large items from the desktop, freeing valuable space," says Mr Morrison. "Long faxes now arrive clearly in a permanent form. And even when the paper tray is exhausted, faxes arrive in the F-3600M's memory. Moreover, PC documents are now printed faster and at laser quality."

Mr Morrison, who has been using the machine for several weeks, says: "I haven't found any drawbacks yet." Using the machine it is possible to scan A4 documents on to the PC or to archive them on to a Zip (storage) disk or CD-Rom. He is considering doing this.

The multifunction fax comes with Office Worktop, a software package for scanning and filing bitmapped images which cannot be edited and optical character read software that conforms to the Twain standard for documents that can be edited.

Underground Moling feels its document production is now as high-tech as the "no-dig" technology it uses to bore holes, where computerised tracking guides a boring device, or "mole", as it travels underground, creating a tunnel to its destination. The pipe or cable being installed it is then drawn back through the borehole.

Thus, while a neat, multifunction system saves space in the office, so – on site – two small boreholes at the beginning and end of the cable run replace large, unsightly trenches.

Joia Shillingford

SETTING UP A WEB SITE by Mark Vernon

Making the online image match the product

Web site visitors must be persuaded to stay, but too many features could put them off by wasting their time

The process of going online can be like "getting changed in a public place," according to one information technology expert.

"No-one wants to be seen sporting purple Y-fronts when everyone else is wearing Calvin Kleins," says Alex Gibbons, a consultant in the new media skills division at TMS Information Solutions of the UK.

Indeed, who among even the most avid computer buffs would have thought less than five years ago that the humble web page would today be capturing large amounts of research and development spending, be scrutinised by focus groups and be declared the coolest thing in marketing since the cinema ad?

Yet companies are still in experimental mode, assessing the new medium. Some say web graphics work, others decry them. Some say the web is the new place to be, others that it is merely a fashion.

"While there is a lot to consider, establishing the right strategy for your web presence is not really that frightening. The same principles can be applied to this as with any new marketing effort," adds Mr Gibbons.

Certain basic principles can be identified. Content is the key, notably in the all-important first contact, the point at which visitors enter the site. They must be persuaded to stay.

Then there is a balance to be struck between lots of eye-catching features and none at all. The site should not look dull but it also must not introduce unnecessary delay. Also, the user must be able to move around the site, although there is much discussion about how to assist navigation.

'The secret is to have on the web site what the customer will expect'

But for many organisations, just finding the way to an online presence is tricky. Lucky companies might find the skills in a web enthusiast already employed on the helpdesk.

But for most, the best and easiest way forward is to seek outside help In common with other forms of corporate communication such as advertising, this means a degree of outsourcing.

"Web publishing is no different and in some respects more complex," says Luca Menato, executive producer of Brann Interactive of the UK.

"Unless these companies have marketing skills in-house, they are best served by outsourcing the web design and building requirements with a specialist company or web intermediaries."

However, this can be risky. "Culture shock" can occur when established companies come into contact with zippy web design consultancies, although many of these young start-ups are rapidly becoming attuned to the sensitivities of corporate communications.

AKQA, the UK-based media consultancy, is a leading example, with a number of international brands on its books. Director Ajax Ahmed works with the metaphor of DNA to unpick the strands of a good web site. The backbone of any site is based on performance, reliability and ease of use, but more is involved than this.

His first point is that the web site should not be regarded as a new medium so much as an extension of the product.

"The secret is to have on the web site what the customer will expect, which is not what traditional advertising would say," he suggests.

Enhancing brand by association is the classic ploy in the advertising world. But this approach usually does not work online.

Neither does using the web site to present a collection of related but confusing information. For example, on the BMW site, AKQA constructed an approved used car directory through which customers can find second-hand BMWs.

"We didn't bother with things like road traffic information. Customers go to the AA [Britain's Automobile Association] for that," says Mr Ahmed.

Similarly, for Orange – the UK mobile telephone company – the web is a customer services application. Users can send text messages from its site to mobile phones, for example. There is little point in companies providing what is in effect only an online brochure if they want repeat users of the site.

The deeper point is that web sites must not open up a credibility gap between themselves and the product. Mr Ahmed believes that vendors of fast moving consumable goods are particularly prone to this.

"They think that they are media owners opting for teenage content, lifestyle features or acting as a gateway to music," he says.

"But the product is the hero. I am not saying that you cannot have stuff [which is] not about the product, only that it must be credible."

Intuitive navigation of the site is vital. Users move away if they get lost or cannot find what they want.

"Just because it is the web does not mean it has to look like a web page. It must have a purpose," says Dharmesh Mistry, a director at another UK consultancy, Entranet.

The company designed an innovative site for the Co-operative Bank on which no service is more than one click away. Further, with a number of subtle features, the interface tries to ensure that the user always feels in control.

Advertising is a key component in many web sites, although Forrester Research of the US warns against too much Internet advertising. The findings of its report, *Media's Online Challenge*, suggest a failure on the part of advertisers to attract consumer attention and establish an effective advertising vehicle.

"The fact is, consumers love online content," says Shelley Morrisette, director of quantitative research at Forrester.

"To be effective, online media companies and advertisers need to enhance and leverage this content to gain consumers' attention and trust." Simply asking for personal details in a registration form is not subtle enough.

The screen may catch people's attention, but how relevant is the online message when it comes to making a commercial impact?

HOME NETWORKS by Philip Manchester

Online opportunity could prove to be 'a pot of gold'

Although the home has yet to become a networked zone, companies foresee lucrative prospects once the technology becomes cheap and widely available

The home is set to become the next target for networking technology. Research in the US predicts 35 per cent annual growth in the market for networking equipment for home use, and telecommunications suppliers are keen to exploit a potential bonanza in new services.

Forrester Research estimates annual sales for equipment and services for home networks in excess of $1bn by 2002. "The home is the only place where networks have yet to make an impact – but it is only a matter of time," says Hyeon Lee, general manager of Lucent Technologies' residential networks group.

"The popularity of the Internet together with the desire of suppliers to bring services to the home will help to push networking technology into this new space," she continues.

Certainly, home networking was high on the agenda at last month's *Comdex* conference in Las Vegas. A crowded session on the subject heard a succession of speakers from across the telecommunications and computer industries talk of a science fiction future where the home would become an "intelligent" component in the global network.

Dan Sweeney, business unit manager at Intel's home networking operation, noted that lower prices and easier installation would push the technology forward. "You don't need any new wires, it is simple to install and the cost is below $200 per PC and falling. Early applications will be extensions of the PC – like sharing a printer or shared Internet access."

Important elements such as standards and sufficient bandwidth were quickly falling into place and prospective home users had a range of choices for their home network "infrastructure", he added.

"You can extend the existing telephone line system, use wireless or even the AC power line system."

Todd Green of Intelogis, a company specialising in using the power line system for home networks, pointed out that there were now 15m homes in the US with multiple PCs and this is expected to rise to 35m by 2000.

"Only 10 per cent of these are currently networked because traditional networking technology is too expensive and too complicated to install. We are aiming to lower the cost and make it easy to do," he said.

Intelogis sells a kit for about $60 which plugs straight into a PC and uses the domestic power supply as the network.

Today, it operates at 350 kilobits per second – but Mr Green claimed that his company would be able to deliver a two megabit per second version next year and aimed to push the speed up to 4 megabits by 2000. Other suppliers working in the same area include Echelon and Intellon.

Two industry groupings have emerged

While the design of the US power system is such that it can be used for home networking relatively easily, European homes are more likely to build their networks around telephone lines or wireless systems. Two industry groupings set up to promote the two technologies have emerged this year – the Home Phoneline Networking Alliance (HomePNA) for telephone-based systems and HomeRF Working Group (HRFWG) for wireless. Both aim to create network connection standards to enable a wide range of devices to plug into a home network. HomePNA members include IBM, AT&T, Compaq, Hewlett Packard and Intel.

HRFWG members include Intel, Sony and Matsushita. A draft specification for the Shared Wireless Access Protocol (SWAP) standard is due to be published by the end of 1998; the first devices to use the standard are expected in the second half of 1999.

Regardless of the underlying technology, all of those involved share a single vision – a home network that knits together the proliferation of digital devices now common in every home. This could mean, for example, that an individual could telephone home and turn on the central heating system or the oven.

At a more mundane level, early applications are expected to include shared printing and storage or simultaneous access to the Internet from two PCs on one telephone line.

Lucent's 'residential gateway'

Ms Lee of Lucent, for example, says her group is working on an experimental system to provide a "residential gateway" to the telecommunications system.

"Lucent has a number of projects under way – including a chip set for the HomePNA standard and a wiring system for new homes," said Ms Lee.

"My group is looking at a gateway product to enable home users to plug into a cable modem or an ADSL line for high-speed access to the Internet."

Asymmetrical digital subscriber loop (ADSL), which uses existing copper wiring, and cable both offer the greater bandwidth needed for the expected increase in network traffic to the home.

Ms Lee says this opens the door to a range of applications from home monitoring and security to entertainment and combined voice and data communications. More importantly, it offers opportunities for telecommunications suppliers to create new services for residential users.

"The home network is a pot of gold sitting below the surface for suppliers," she adds. "They are racing to bring more bandwidth to the home – through technologies like cable or ADSL. This is essential for delivering services that people will want to use.

If you draw a parallel with the water system, for example, no one would think of installing plumbing to get a few drops of water to the tap.

"But if you can provide it on demand in large quantities, then it starts to make sense. The same goes for home networking."

The digital world and the battle for the eyeballs: see page 21

SOFTWARE SUPPLIER PROFILE: COREL by Geoffrey Wheelwright

Vigorous defence for controversial WordPerfect purchase

Mike Cowpland, head of Corel, says consolidation will significantly reduce research and development costs

A lot of people have told Mike Cowpland that he made a mistake two years ago when he negotiated a deal for his Ottawa-based Corel Corporation to buy the troubled WordPerfect suite of word-processing and office productivity applications from Novell, the network software giant.

WordPerfect had for some time been losing market share to Microsoft Office, while Corel's own CorelDraw graphics software application was one of the few mainstream software products not to run into competition with Microsoft.

Industry observers speculated publicly about whether Corel's chief executive was wise to enter into direct competition with Microsoft by buying WordPerfect, and whether it would suffer as a result.

Two years later, Dr Cowpland will admit that it has not been easy championing both WordPerfect and CorelDraw. But he steadfastly insists that the WordPerfect acquisition was not a mistake, despite the fact that Corel has been on a financial rollercoaster ride for the past year.

In late September, Corel reported fiscal 1998 third quarter results for the period ended August 31 that seemed to bolster Dr Cowpland's claims. Revenues for the third quarter of 1998 were $71.1m, up 46 per cent from $48.8m from the same period in 1997, and up 13 per cent from revenues of $63m for the second quarter of fiscal 1998.

Corel's Comdex announcement

Last month, at Comdex, the IT industry event in Las Vegas, Corel unveiled a beta version of its new office suite, WordPerfect Office 2000. The product will include WordPerfect 9, plus a powerful spreadsheet and personal information manager system.

Corel's announcement followed the unveiling by Microsoft of its Office 2000 suite. Despite the anticipation of new revenues from the upcoming version of Word Perfect Office2000, Corel is still losing money. And its share price had declined from more than $4 to less than $2 in mid-October.

Still, there are some signs of progress. Net loss for the third quarter of fiscal 1998 was $7.8m, or 13 cents a share, compared with a net loss of $8.2m, or 14 cents a share, for the second quarter of 1998. Part of the loss can be attributed to moves taken by Dr Cowpland to stem the costs of WordPerfect development and consolidate it at the company's Canadian headquarters.

Corel recorded a non-recurring restructuring charge of $15.9m, attributable to the consolidation plan, a key element of which was the transfer of research and development from Corel's Utah engineering centre to facilities in Ottawa. The company says that this consolidation will contribute to a significant reduction in future research and development expenses and claims that future product releases will remain on schedule.

FT IT

Productivity software: focus on Corel

"We feel this is our real turnround quarter," says Dr Cowpland. "These results show that the steps we have taken during the past three quarters are working.

"We anticipate to return the company to profitability by our fiscal year-end. We believe that our results will continue to improve and are consequently targeting sustainable profitability beginning in the fourth quarter of fiscal 1998."

He rejects the notion that he should have any regrets about buying WordPerfect.

"Although with WordPerfect we have made a few mistakes here and there, it has definitely not been a mistake," he says, suggesting that the recent consolidation of research and development efforts in Ottawa will further remedy Corel's WordPerfect situation.

Increasing market share

"We now positioned to compete in a broad spectrum of applications," he adds.

He also disputes statistics that suggest WordPerfect is losing the battle for market share in the office suites sector.

"We are seeing good resiliency in terms of maintaining and increasing market share and we are settling into a stride where we can co-exist and provide a good alternative to Microsoft," says Dr Cowpland. "We are a good number two with full data compatibility with Microsoft Office and that extra graphics sizzle that Corel is known for [in the current version of WordPerfect]."

He admits, however, that it is difficult to ride both the CorelDraw and WordPerfect horses at once. "It is a management challenge having two flagships to run, and we are pleased that we are now moving to consolidate into one operation," he adds.

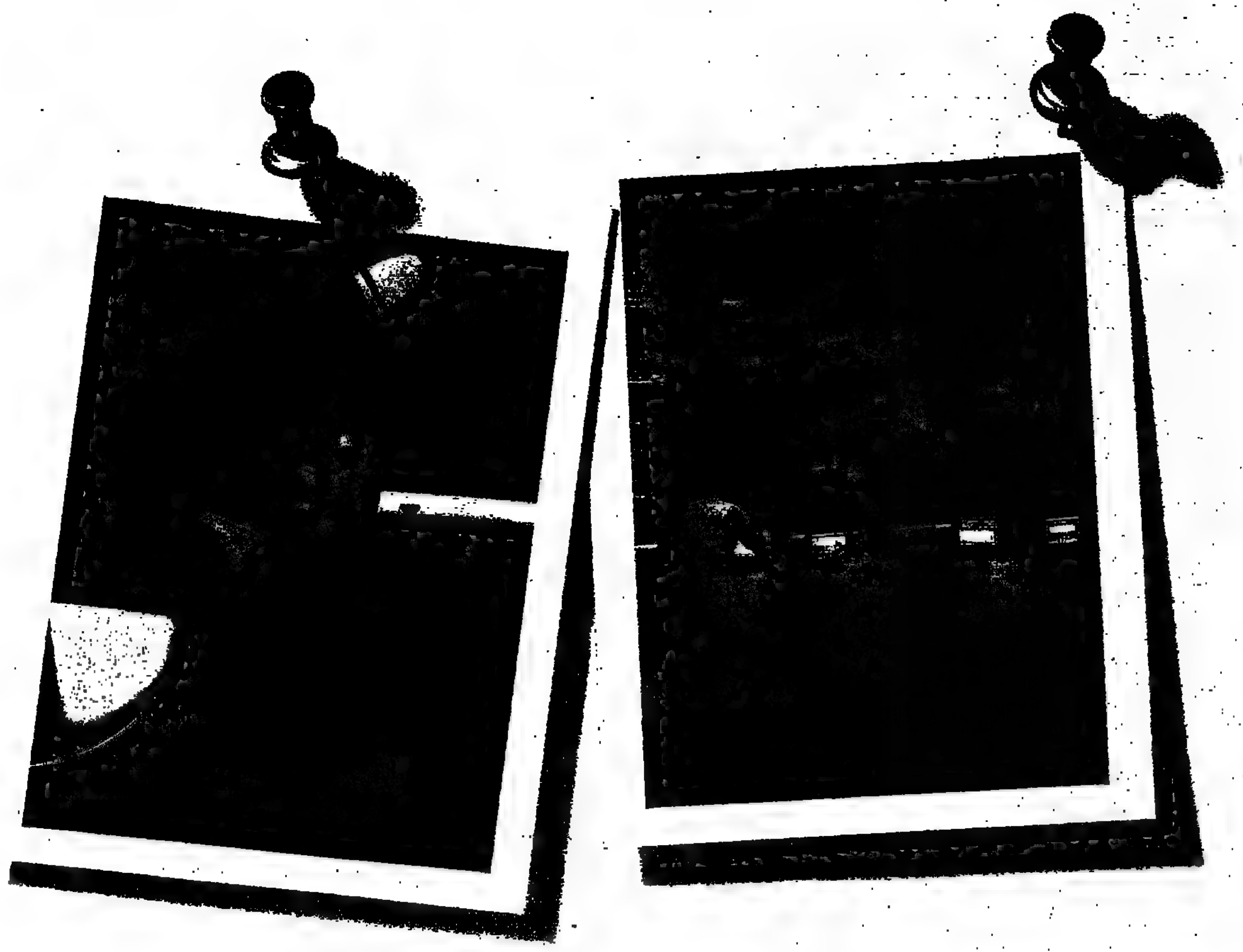
"Before now, it has been difficult to get as much produced as we had hoped. And we will see huge savings – as much as $10m a quarter. We needed to make sure that the WordPerfect technology would move forward in a seamless way to keep our loyal users."

Dr Cowpland also sees a lot of Internet-related opportunities for Corel. Earlier this year the company launched a new hardware division known as Corel Computer. It sells "Internet and intranet appliances" that run the Linux operating system. The most recent of these is the NetWinder WS, a World Wide Web server that uses the StrongARM RISC processor, comes with 32Mb of Ram, a 3.2 Gigabyte hard drive and sells for $969.

Dr Cowpland, head of Ottawa-based Corel: 'We can co-exist with Microsoft'

Corel Computer promises that users should be able to use this server to quickly set up and begin hosting World Wide Web pages.

Other Internet and intranet-related projects include Corel's JBridge software, which provides a bridge between so-called "thin clients" corporate networks and the Internet and intranet worlds, and a Linux version of WordPerect.



Cheap consoles keep PC competition at bay

Despite falling prices of both PCs and Internet-ready games machines, they are still aimed at different audiences

Dedicated computer games consoles continue to achieve huge sales. Sony's Playstation has sold 43m units since 1994, with the price having fallen by two-thirds.

Sony blazed the trail for these advanced gaming machines, built around PC chip technology, and its latest financial results show just how successful it has been.

Computer games generate $5.4bn of the corporation's $51bn turnover. And games are tremendously profitable, with 22 per cent of Sony's profits now coming from this business. Playstations sell in phenomenal numbers because Sony knows who the game players are and delivers what they want. For what they want is usually deceptively simple.

Similar principles are applied by Sony's two direct competitors, Sega and Nintendo. Games console customers have acquired a down-market image.

But while teenagers playing violent games in their bedrooms are still a major part of the customer base, older and more affluent games players are emerging. Sony says the average Playstation owner is now aged 21.

Ray Maguire, Sony's UK managing director, says they now sell to a generation which has grown up with games consoles. "People started with the early machines around 1992 and have remained loyal to games. They've made the transition to new products and that has helped to raise the average age of our customers."

Sega's new machine, the Dreamcast, is waiting in the wings to challenge Sony's dominance, but Mr Maguire thinks that hardware is not the important issue it once was.

"It's true that the quality of the hardware can always be improved, but people are now more interested in the software than the hardware."

The battle for the games console market is being fought out in the development labs of the hundreds of games software houses that manufacturers use to attract hardware sales. Since 1994, some 2,700 games have been written to run on the Playstation.

Focus on the computer games market

Mr Maguire does not see Sony as being in the IT industry. "We are definitely in the entertainment business. So our competitors aren't just the other games companies. We compete for the customer's money with the cinema and other leisure activities."

Dick Francis, UK managing director of Nintendo, confirms that the market for the N64 console has changed. "The video games market has been around for 10 years or more. It used to be a fight between Sega and Sony for the attention of games addicts aged between eight and 15 playing in their bedrooms."

Launched in March 1997, the N64 has followed Sony with a rapid decline in price. And the games addicts have grown up. "We now sell to a much older group of players, 25 and 30 year olds," says Mr Francis.

Nintendo sold 700,000 machines in the UK in 1997 and expects to shift a similar number in 1998. Market growth appears when software sales, the games that provoke hardware sales, are studied. In 1997 1.5m games were sold for the N64 in Britain, but this year that figure should rise to more than 2m.

Nintendo also sells the smaller Gameboy machine. Over the last decade, 65m of these have been sold worldwide, and although a visibly different product from the larger games consoles, it still accounts for spending in the youth leisure market, potentially undermining the attraction of other machines.

The shift in consumer emphasis from hardware platforms to the games that run on them is a huge factor in Sega's planning for the Dreamcast.

This is its next generation machine. Dreamcast carries with it Sega's hopes of returning to the games console fray and undermining Sony and Nintendo, which have eclipsed it in recent years.

Dreamcast was scheduled to be launched in Japan late last month with a European and US debut in late 1999. The $4bn Sega company sees half its revenues flowing from computer games on consoles and in gaming arcades and thinks Dreamcast can take the market by storm.

But its success will depend on the more than 300 games software houses which have been commissioned to devise games to appeal to various audiences.

Dreamcast will boast a graphics capability three times that of a PC powered by a Pentium II processor – with a built-in modem that provides access to email, the internet and online gaming services.

So does that mean the games console is positioning itself to challenge the portable or desktop PC?

Packard Bell NEC sells PCs optimised for graphics, and hence attractive to game enthusiasts. Sander Siezen, the company's UK product marketing coordinator, says 44 per cent of home computers are used primarily for games. Packard Bell's customers tend to buy a PC for educational or personal finance purposes and then find games the prime attraction.

But even with PC prices falling sharply, Packard Bell does not anticipate coming into direct competition with Sony. The games console will remain the one computing device with its processing power focused squarely on the products of software houses that understand the gaming enthusiast.

GT Interactive underlines the message that in this huge business, the PC and the games console remain far apart. GT Interactive is a Nasdaq-listed games company with 1,400 employees, dedicated to producing games for the Playstation, N64 and the PC.

"There is a real divide between consoles and the PC," says a spokesman. "The personal computer is a more expensive market for the consumer and the specification of a PC changes a lot whereas the console technology stays stable for a few years."

As a game can take two years to develop, this means that if Sony keeps the Playstation design stable for six or more years, that allows the software house time to write several successful titles.

With 30 per cent of Playstation owners in the UK also said to have bought an N64, the low price of consoles continues to keep them distant from the PC sector, no matter how cheap the latest home PCs look.

Computer games players try out their keyboard skills at 'shoot 'n surf' in London's Oxford Street. Most screen games addicts are young men, but the industry wants to tap a broader age range of more affluent players

STOCK MARKET SIMULATION GAME

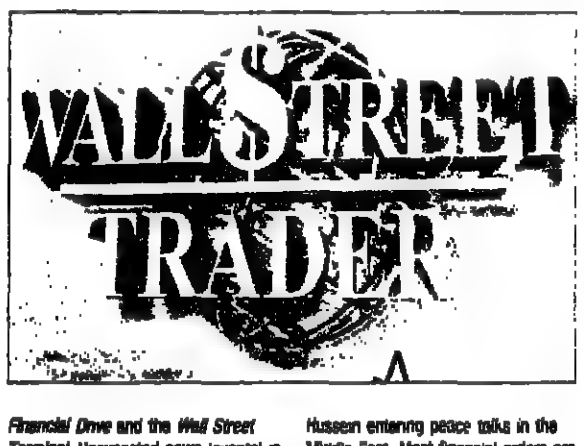
Big time deals for would-be traders

Wall Street Trader 99 from the French software house Monte Cristo, allows game players to experience the fast-paced world of international finance, using 70 recognised stocks and 18 economic indicators.

The game's storyline is that the global market is crumbling. As billions of dollars flow back and forth across the earth, nations stand on the brink of ruin. Lord Fleming, an eminent but slimy financial wizard, is counting on you, the player, to stabilise the situation. Your objectives: eliminate irresponsible speculators, make mountains of cash, and one day take over the Fleming empire.

Using clear and concise graphics, this educative and entertaining PC CD-Rom game has been nominated for Europrix, a prize created by the European Commission to recognise innovative multimedia products.

To spice up this adult business game, (UK price: £39.99), Monte Cristo has added 35 minutes of price-sensitive video, web site and radio news clips to help wheeler-dealer players make their financial decisions. Players can consult share-price graphs in authoritative newspapers such as the *Financial Drive* and the *Wall Street Terminal*. Unexpected news 'events' in the game include a Mobil takeover, oil spills, soaring inflation and unemployment figures, crises in Asia and the Gulf and even Saddam Hussein entering peace talks in the Middle East. Most financial orders are made by dragging and dropping items on the dealer screen. The storyline includes insider dealing and spying on rivals, providing you with multiple scenarios and ruthless enemies.



Wall Street Trader 99, the brainchild of former Paribas trader Jean Marc De Fety, has an internet gaming capacity, enabling you to play against four players in real time.

Despite the stock market game's authentic appeal, some players find the game's 30-page manual somewhat difficult to follow.

❑ System requirements: Pentium 75, 16Mb Ram, 30Mb hard disk space, quad-speed CD-Rom drive; SVGA graphics card (1Mb); Soundblaster or 100 per cent compatible soundcard; Windows 95/98/NT4.0 (service pack 3).

❑ More details from Pinnacle Software in the UK on 01322 663 652 or via the web site: www.montecristo-multi.com.

Michael Wiltshire

GAMES SOFTWARE by Michael Dempsey

Developers seek a far wider audience

Finding a new family-friendly market for non-violent computer games is the main challenge for games producers

When Sega launches its new Dreamcast games console in Europe and the US next year, users will be able to enter the world of Red Dog.

Sega turned to Argonaut, a British software house, to devise this game involving the violent adventures of an armoured vehicle. Jez San, Argonaut's founder and managing director, claims his company is the first to be commissioned to develop software for Dreamcast.

UK companies have an enormous influence in the games software industry. Programmers are frantically devising the games that will occupy computer screens at the start of the next century.

Unlike the conventional industry of commercial software, games software houses are not clustered around the Thames Valley to the west of London.

Computer games writers are scattered throughout the country in small but highly profitable organisations that work at an intense pace in a highly competitive industry. Secrecy is a common characteristic, with companies extremely reluctant to reveal details of their next big product.

At its north London base, Argonaut's 10 teams of programmers generate £5m ($8.3m) of business a year. Each game takes between 18 months and two years to produce.

Mr San's own career illustrates why the UK is a fertile ground for these activities. He founded Argonaut as a schoolboy, following his first experience at programming at the age of 12, then the proud owner of a simple Tandy computer.

It was the enthusiasm of the British for the first wave of home computers, such as Clive Sinclair's ZX81 and the BBC Micro from Acorn that sowed the seeds of the games software industry.

"You could say that the computer games culture started in the UK with the Acorn and Sinclair machines," explains Mr San, 20 years on. These machines did not come with a games package. But they did allow users to write their own basic programs.

The challenge of devising computer games and the ability to create them on cheap and simple products inspired Mr San's generation. Today his company is staffed with programmers who are motivated as much by personal enthusiasm as business drive. "The people who work here are typical games players," he says.

One of Argonaut's success stories is Croc, a game charting the adventures of a cute crocodile with human characteristics. This goes against the familiar trend of extremely violent games aimed at a market of young males.

Mr San is convinced the games industry could do more to break out of this lucrative but narrow market sector.

"The industry is not trying hard enough to get away from violent games. It's true that the market is 90 per cent young men, but not much effort goes into expanding that market," he says.

If games find a market of more affluent buyers, there will be no shortage of new themes

"We learnt a lot from games console maker Nintendo, which specialises in targeting a family audience."

"The weather is in my favour," says Mr San. "This isn't the west coast of the US, where you can surf in your lunchtime. We British favour a lot of indoor activities and there are far more magazines dedicated to the games industry than in other countries."

The marketing muscle of Sony, the games console giant, helps the survival of companies like Argonaut, through shrewd moves like putting Playstations into such trendy London dance clubs as the Ministry of Sound.

"Linking the Playstation to club culture and contemporary music made it hip to play games," he adds.

While the rise of new musical trends helped computer games retain a fresh flavour, the association between games and blockbuster movies has kept up the mass attraction of the software that sells machines such as the Playstation.

Though based far from California, Argonaut's fortunes reflect the activities of Hollywood studios. It has produced a game linked to the Alien series. "But we can't produce a game as quickly as Hollywood can make a film because we can't throw more and more people at the production process," says Mr San.

Another person who became hooked by the computer games industry is Peter Molyneux. After selling his first UK games company, Bullfrog, for more than $40m he went back into business with Lionhead in 1997 and is now developing software for Sega's Dreamcast.

"I had an Acorn Atom and started writing games in 1979. Machines like this were the foundation of the games industry and created a bandwagon to leap on."

Mr Molyneux agrees that the games industry needs to move on from its core customer base of young males. "The industry is trying to create a mass market in terms of age ranges and areas of the population," he says.

The trail blazed by Sony's Playstation is promoting all games beyond the traditional market, leaving the likes of Molyneux in awe of the Sony marketing machine. "Last year, I went skiing in Val d'Isère. Every ski slope had a billboard advertising the Playstation," he recalls.

If games do find a market of more affluent consumers, there should be no shortage of new themes. Eidos, the UK games software house, sold 8m copies of the Tomb Raider series, generating £137m and inspiring more ambitious young programmers.

The Scottish Games Alliance, sponsored Games Developer UK '98 with economic development agency Scottish Enterprise, launching this competition for new games in March. It received 600 entries from amateur games enthusiasts who are keeping alive the British love of game-writing from their homes.

Tivola's electronic version of five classic games for all the family

Tivola's new interactive games in three languages

Tivola Verlag, the award-winning Berlin-based multimedia publisher which has licensed its CD-Rom series for children in 15 countries, is launching its "Great Games Compendium", and other new titles in Britain.

Through original animation and illustration, Tivola produces a wide range of CD-Roms and interactive "play stories", intended for children and adult players.

The interactive Games Compendium (UK price: £12.99), is intended for players "as young as four to 102", says the company which produces a series called 'Play and Learn', in English, French and German, and 'The World Around Us', for younger children. Detailed water-colour pictures encourage observation skills, as well as helping children with counting and reading. Players of the "Max" series (£19.99) can choose which language they want to play in at the beginning of the game.

For more information, contact Tivola on +44 (0)181 741 8011, or e-mail: mail@tivola.co.uk

Music Choice, the European internet music service – accessed by cable networks – allows internet surfers to listen to a choice of four different music channels, uninterrupted by adverts or DJ chat, while they browse the world wide web

YEAR 2000

PHILIPPINES SOFTWARE CENTRE by Michael Dempsey

Bullet-proof approach to complex projects

After the success of an international software venture, the Manila government is hoping other projects will follow and help the country develop its IT profile

The IT industry is plagued by projects that run out of control, breaking budgets and deadlines. The entire computer sector is being held responsible for the looming threat of the millennium "bomb".

Technology consistently fails to match the promises that are made for it. So when a respected consultancy makes the bold claim to have left these handicaps behind, it is worth investigating.

The claim is all the more unusual for being made in a 15th floor conference room boasting panoramic views of the Manila Bay area.

William Padolina, head of the Philippines IT council: 'exploring IT zone possibilities'

James Martin & Co, an international IT consultancy, has put $5m and some 200 local staff into a Global Development Centre based in the Philippines. The centre's executive director, Vivian Miners, says it will handle IT projects in a way that makes them "bullet-proof".

Marife Zamora, the GDC's managing director and a veteran of 18 years with IBM in the region, believes that the people JM & Co has recruited to develop software in Manila are "even better" than her erstwhile colleagues at IBM. But how can either of them prove the bold promises made for the GDC?

Each PC at the GDC has $30,000 worth of software tools loaded on to it. But investment in computer programs alone cannot account for the confidence that JM & Co displays in chasing difficult contracts.

Bullet-proofing software projects is outlined thus by Mr Miners: "We test and replay the tests. We only pass an application as OK if parallel tests confirm that it will work." Small teams of programmers address different aspects of the problem.

Pulling Octopus, the world's largest contactless smartcard project, back from the brink in Hong Kong provided JM & Co with a huge coup in the Asia-Pacific region. Other projects have followed swiftly.

The Social Security System was a $1.1m project for the Philippine government that used the principle of reusable chunks of code and rigorous prototyping to move from starting the project to deploying the system inside three months.

FT IT

Software development: focus on the Philippines

The issue at the core of the project is the Philippine system of social security clearance, providing a business permit to employers and the self-employed. The initial 700 sites will expand to 1,600 municipalities scattered across the islands of the Philippines.

JM & Co integrated point of service terminals, familiar from the retail world. An Oracle database holds the central store of data.

Prior to the system's implementation, a permit could take weeks to issue. Already, business permits are being renewed online well within the five-day target period, and often within seconds.

Networks are the basisof James Martin's philosophy of the Cybercorp. This is his vision of the flexible commercial operation that can adapt and thrive in a volatile global economy.

The theory of the GDC is that it will take over the reins from JM & Co operations in other regions as time zones send one set of programmers home for the night.

This proved critical for the Octopus time-frame. "The cycle could start in Europe, move to North America as the day ends and on to the GDC," says Ms Zamora.

The Manila office saw revenues grow by 62 per cent to $30m in 1997. Since 1993, the Manila operation has won software development projects across Asia.

The Philippine government has clearly bent over backwards to assist the GDC, offering what Patrick Litre, regional director, describes as "real, focused help to develop a business".

This has involved mouth-watering tax breaks, with JM & Co enjoying what is effectively an eight-year tax holiday. But the presence of Department of Science and Technology Secretary Dr William Padolina, chairman of the Philippines National IT Council, at the GDC launch underlines the political significance of IT for Manila. "We are exploring the possibilities for an IT zone in the Philippines," Dr Padolina said, clearly hoping that the GDC would spur other companies to recruit locally.

His department has already held talks with SAP, the German software giant, on a potential expansion of its interests in the Philippines. Dr Padolina regards the network-centred view of computing as complementary to the efforts of developing economies to attract high-tech investment and jobs.

If networking and use of the Internet continue to grow, nations like the Philippines stand to benefit from the irrelevance of geographical location.

"It has always been the position of the department that IT literacy is the Philippines' best chance of being competitive in the world market," says the minister.

In line with this aim, a Philippine government internet project, RP Web, should link all state offices by 2000.

Dr Padolina notes that the Philippines is turning out 15,000 new IT graduates every year. When conversation turns to Malaysia's much-vaunted Cyberjaya, the multimedia corridor planned for the outskirts of Kuala Lumpur, he is quick to point out the contribution of Philippine brains.

"They are using our people for the Cyberjaya," he declares. "Steven Spielberg also has Filipino computer programmers working on graphics and animation at his studios. IT has become a source of national pride in Asia, and the Philippines feels it is time to claim credit for its achievements."

The fact that JM & Co staff come to Manila from the UK for training proves that the vision of an international, networked software house indifferent to geographical location is a reality.

Visiting the GDC still means negotiating Manila's formidable traffic congestion. And the view from the 15th floor of the office block in the capital's Makati City business district reveals a chaotic and sprawling city.

Perhaps the location suggests that JM & Co is not shy of more challenges after rescuing the Octopus card. And Mr Miners notes that the site of the GDC embraces the ancient oriental view of space and energy now enjoying vogue in the West and known as feng shui. The offices "face a lucky star".

James Martin (right) and Vivian Miners, the men spearheading the Manila venture. In tune with his guru status, Mr Martin still enjoys writing and lecturing and 'thinking about our work'

Marife Zamora, managing director of the Global Development Centre

CASE STUDY: James Martin & Co

Getting to grips with Octopus

As the deadline for Hong Kong's handover neared, speed was vital for a smartcard project

Time was running out when a team from James Martin & Co, the IT consultancy, evaluated the case for taking on a new contract. The potential business had come up at very short notice, *writes Michael Dempsey*.

Hong Kong's transport authorities had commissioned a new cashless and contactless payment and ticketing system based on smartcards bearing computer chips two years previously.

Radio transmitters would subtract value from the card from a distance of up to 10 centimetres so that rush-hour commuters would not need to remove the card from their wallet or bag.

Sony designed the card with a communications component on the chip that exchanges information with each local radio network embedded in the station gates.

The project and the cards became known as Octopus. The first software contractor on the project, Unisys, had withdrawn and, with the politically charged deadline of July, 1997, for the handover of Hong Kong to Beijing, the transport companies had to recommission the project.

Creative Star, the consortium of Hong Kong transport companies and ERG, an Australian electronics group specialising in fare collection were already heavily committed to Octopus. The hardware for ticket gates had

Continued on next page

INTERVIEW: James Martin, entrepreneur and IT guru

Success story leaves just one regret

Mention of the year 2000 problem provokes an emotional reaction from the man who has written more than 100 books on IT, reports Michael Dempsey

James Martin is one of the IT industry's personal success stories.

Nineteen years with IBM, two incarnations running his own companies and the publication of 101 books on technology-related issues have left him with a worldwide reputation and a personal fortune reputed to be in the region of $100m.

His views on the way computer technology should be harnessed have always been strong. As the brains behind the IT philosophy of Computer Aided Software Engineering (Case), Mr Martin reminded the IT community about the need to apply methodologies and structures to a business that has since become notorious for breaking deadlines and running over cost.

His first company, James Martin Associates, was founded in 1982 and sold with the rights for the Information Engineering Facility, a Case software toolbox, to Texas Instruments for $30m in 1991.

Earning the title of "the father of Case" has also won Mr Martin plenty of critics, who resent what they see as commandments on how to conduct their business. For his part, he speaks of "amazing resistance to change" in parts of the IT community.

But Mr Martin's success as an author and on the lecture circuit commanding fees of $30,000 a day has been matched by the achievements of his companies. JM & Co was founded on April 9, 1991, immediately after the sale of JMA.

His latest title, *Cybercorp*, is a typical Mr Martin product: wholly emphatic in its demand that success and survival in the next century demand constant agility in shifting business models to suit an online society.

Call to arms

Yet *Cybercorp* is not just another call to arms in the Internet age. Speaking at the launch of JM & Co's Global Development Centre in Manila, he cheerfully admits that the Internet "is fairly slow and crude today".

Cybercorp makes the point that training and assistance are still required to prepare users for an immature technology, "without help potential users often become net-phobic".

Given his prolific writing, it is easy to dismiss *Cybercorp* as the latest volume in a continuous output. But Mr Martin has spotted a shift in the attitude of senior executives. Today, chief executives are less likely to be irritated by an outsider telling them how to reorganise their company. "My theory of the Cybercorp would have really put a CEO's back up five years ago," he says.

"But now they see a huge tidal wave of electronic commerce coming. They know that if the competition implements change and they don't, they'll be in trouble."

He finds that his seminars are attracting far more intensive questioning as the year 2000 approaches and the millennium date issue concentrates the minds of chief executives on the significance of IT within their organisations.

Mention of the millennium bug provokes an instant and emotional reaction from Mr Martin. "This is a problem that was caused by incompetence," he says.

Outside the IT industry few people would disagree, although the implication of Mr Martin's view on the year 2000 is that if his approach of software engineering and structured data modelling had enjoyed wider acceptance, the millennium bug would never have happened.

Passionate views

Mr Martin is clearly driven by a passion for the better management of business. When pushed on why JM & Co is positioned to redesign companies, his reply is exasperated and clearly comes from the heart.

"Everywhere I go, I feel overwhelmed by the obsolete nature of most corporations," he says.

JM & Co now employs 700 staff worldwide, turns over $100m and has engaged in high profile and extremely challenging tasks such as designing the software infrastructure for Hong Kong's contactless smartcard system, Octopus.

But Mr Martin insists that JM & Co is not about to grow beyond its limits. "We could hire thousands of programmers, but that's not what we need," he says.

"To make this company succeed, we need executives who are businessmen. The supply of programmers is not our limiting factor, the supply of high-level executives is."

The software rescue mission that was entailed in the Octopus project suggests that the JM & Co organisation is positioning itself as an IT fire brigade force. This is not how Mr Martin sees the role of his latest venture.

"I don't think we'd like the term 'fire brigade'," he says. "'Mission critical' is more appropriate."

'Value streams'

As befits the author of so many management publications, Mr Martin has given rise to catchphrases and his own jargon. One of the terms he remains most fond of is "value stream".

This is the idea that the IT contractor must maintain a clear identity with the purpose of the project as different technology elements evolve. And it gives an identity to Mr Martin's business.

"If we were just about writing software, we would face a lot of direct competition. But very few other contractors have a clear idea of the value stream in business. Whatever you chose to call any corporation, it is a collection of value streams."

He contends that smart businesses will have to recognise their best value stream, even if this means bowing out of other activities. "What we have identified here has implications in terms of management upheavals. We are moving into a global economy where the winner takes most," he says.

"Clearly, there can't be a winner at everything, so businesses that learn to specialise will become very good at understanding their value stream."

Lack of ambition is not a problem for Mr Martin. He forecasts that JM & Co will grow tenfold to become a $1bn business. Now 65, he intends to be working for the company when it hits that landmark figure.

"I've no plans to retire. I enjoy writing and lecturing and thinking about our work."

In September, he became chairman emeritus of JM & Co, relinquishing day-to-day control of the business but maintaining a strong personal and financial influence with a travel schedule to match. But he does look back on his career with one regret: "I should have left IBM 10 years earlier than I did."

He is now involved in plans for an Oxford University Business School, working with the vice-chancellor of the university he left with a degree in nuclear physics.

THE DIGITAL HOME by Paul Taylor

'Battle for the eyeballs' hots up

More than ever before, intelligence is being embedded in consumer electronic equipment and household white goods

When Intel, the world's largest chipmaker launched the Pentium MMX microprocessor a few years ago Andy Grove, Intel's former chief executive, described the ensuing battle for the home market as "the battle for the eyeballs".

This has proved a fitting description as global sales of ever more powerful home personal computers have overtaken those of television sets.

The arrival of high power 3-D graphics cards, DVD (Digital Versatile Disc) drives and multimedia software has also pitched the PC into a direct battle with games consoles and other entertainment devices.

The console market continues to grow, reflecting mainly the success of Sony's PlayStation machine, but the personal computer is now accepted as a viable games platform in its own right and a worthy rival for the dedicated machines built by Nintendo, Sega and Sony.

While the cheapest personal computers still cost four or five times the price

An entry level home PC costing less than $1,000 from a leading manufacturer now has the processing power of a 1970s mainframe

of video games consoles and are more difficult to use, the widespread deployment of CD-Rom drives within PCs has helped to fuel a surge in PC-based video games.

Rapid advances in both computing power and three-dimensional graphics capabilities have turned the general purpose personal computer into a solid games machine and a worthy rival for dedicated consoles despite the insistence of games aficionados that consoles are still best.

This reputation has been enhanced by the success of PC games such as Doom and Tomb Raider, the hugely successful adventure game starring a well-endowed female character called Lara Croft.

Indeed, the huge installed base of personal computers – there are an estimated 250m personal computers in the world and annual sales are running at around 85m – means that the PC has become an attractive option for games developers and publishers.

At the same time the astonishing growth of the Internet, the web and online market has turned the home or small office PC into a vital communications tool and, increasingly, a device for conducting electronic commerce.

The most recent research suggests that in households with both PCs and television sets young people in particular are spending more time on the net and using their PCs than watching television.

Home PC buyers are also becoming more demanding. Toon Bouten, Compaq vice-president for consumer products in Europe, says today's PC purchasers want high-end machines at rock bottom prices.

Historically, corporate personal computer buyers bought the biggest and fastest machines. But over the past five years all that has changed. Spurred on by plunging PC prices and the power-hungry hardware requirements of multimedia games and digital imaging, home PC buyers now choose the latest and best machines.

Today, most home PC buyers will select a machine built around Intel's latest generation Celeron or Pentium II microprocessor running at 333MHz or faster, with a large 9GB hard drive, a 32x speed CD-Rom or DVD drive, a 56Kbps modem or and ISDN card and 64MB or 128Mb of Ram.

Multimedia computing is more demanding than traditional business computing because it takes millions of times more data to make audio and video come alive on the PC than it does to create business documents and financial tables, notes Intel.

Today's three-dimensional flight simulator and racing games use as much processing power as yesterday's most advanced scientific applications running on exotic, multi-million-dollar supercomputers.

Even an entry level home PC today costing less than $1,000 from a leading manufacturer such as Compaq Computer, Hewlett-Packard or Packard Bell now has the processing power of a 1970s corporate mainframe.

However, the recent rapid expansion of the sub-$1,000 market in the US and now in Europe did catch Intel and some PC manufacturers off guard. Rival chip makers, particularly AMD, managed to grab a sizeable chunk of the home PC market with cut-price microprocessors before Intel responded with its Celeron processor.

As a result, PC buyers face the widest choice of microprocessors to power their machines than for many years. Some are also choosing to purchase Apple Computer's latest machine the iMac which, aside from a unique design, is intended to be particularly easy to set up and use.

Ease-of-use remains a key issue, particularly for operating system developers such as Microsoft. Tomorrow's PCs are likely to be easier to use and more fun thanks to their greater processing power and technologies like voice activation, digital versatile discs and real-time video processing.

They should also be less frustrating for new users and be capable of self-healing – diagnosing their own problems and finding solutions. This, in turn, is expected to fuel a further expansion of the home PC market.

As the installed base of home PCs grows some families will end up with several machines. In the US, 14m, or 35 per cent, of the country's 40m homes with personal computers already have more than one.

As a result, Intel and industry analysts are predicting a surge in home networks – PCs hooked up together to share resources such as printers, files and internet access.

Network equipment manufacturers such as Cisco, 3Com and others are already predicting a boom in home and home office networks. While some of these will be hard wired using network cables, others will use existing power line or telephone cables or wireless links.

These home networks are likely to hook up a wide variety of devices including digital set top boxes. The arrival of digital broadcasting and interactive services will further blur the distinctions between a PC television as a communications and entertainment centre, particularly once digital set-top boxes are equipped with high-bandwidth communications links.

For example, the set-top boxes produced for the launch of digital satellite and digital terrestrial broadcasting services in Britain over the past two months are powerful personal computers in their own right equiped with smartcard readers and modem connections.

In this new digital world there may also be a place for hybrid PCTVs and so-called web-TVs as well as "smart" telephones and other gadgets and "thin client" machines designed to combine the features of a personal computer, electronic organiser and web-enabled communications device.

NCR, the US-based IT systems and data warehousing group, recently caught public attention by demonstrating Microwave bank to illustrate the fact that banking and other services are likely to be delivered into the home using a wide variety of devices and communications routes.

More than ever before, intelligence is being embedded into consumer electronic equipment and household white goods, blurring the distinctions between personal computers and other machines and hastening the arrival of the digital networked home. The battle for our eyeballs may have only just begun.

In the US and Europe, home computers, desktop colour printers and colour scanners are bringing the magic of photography to amateurs of all ages. As the installed base of home PCs grows, some families will end up with several machines. In the US, 14m, or 35 per cent, of the country's 40m homes with PCs already have more than one AP

OCTOPUS IN HONG KONG

Ahead of schedule

From page 19:

JM & Co's Manila operation took up the challenge, it decided to abandon aspects of the work that had been done.

"We did look at the software designs, but they hadn't been done to a method we could re-use," says Vivian Miners, executive director of the company's Global Development Centre in Manila.

The recycling of computer code is key to the JM & Co way of working. Work on finance contracts for Jardine Group provided bricks of software that could be slotted into a transport project.

The world of object-oriented software, where code is written to relate to specific objects in the real world so it can be re-applied when those objects are invoked in another program, was the key to this job. "In JM & Co, people have become used to working like this," says Mr Miners. "They like to plug and play with software the way some people switch between hardware items.

"We re-applied about 60 per cent of the software from our library of other projects. This has given us an assembly line of proven code, employing reusable objects. Around 40 per cent of the software was written as new."

Paul Smith, ERG general manager on Octopus, explains that as Hong Kong commuters load up the Octopus card from metro stations, they deposit a huge amount of cash.

Thus the key to managing Octopus was to realise that the transport authority was effectively becoming a bank. Since cost estimates had doubled for the project, further slippage could not be tolerated.

Using JM & Co as a manager for the software project, Mr Smith established set deadlines for practical achievements, adding functions to Octopus as they were proven by a vigorous testing regime.

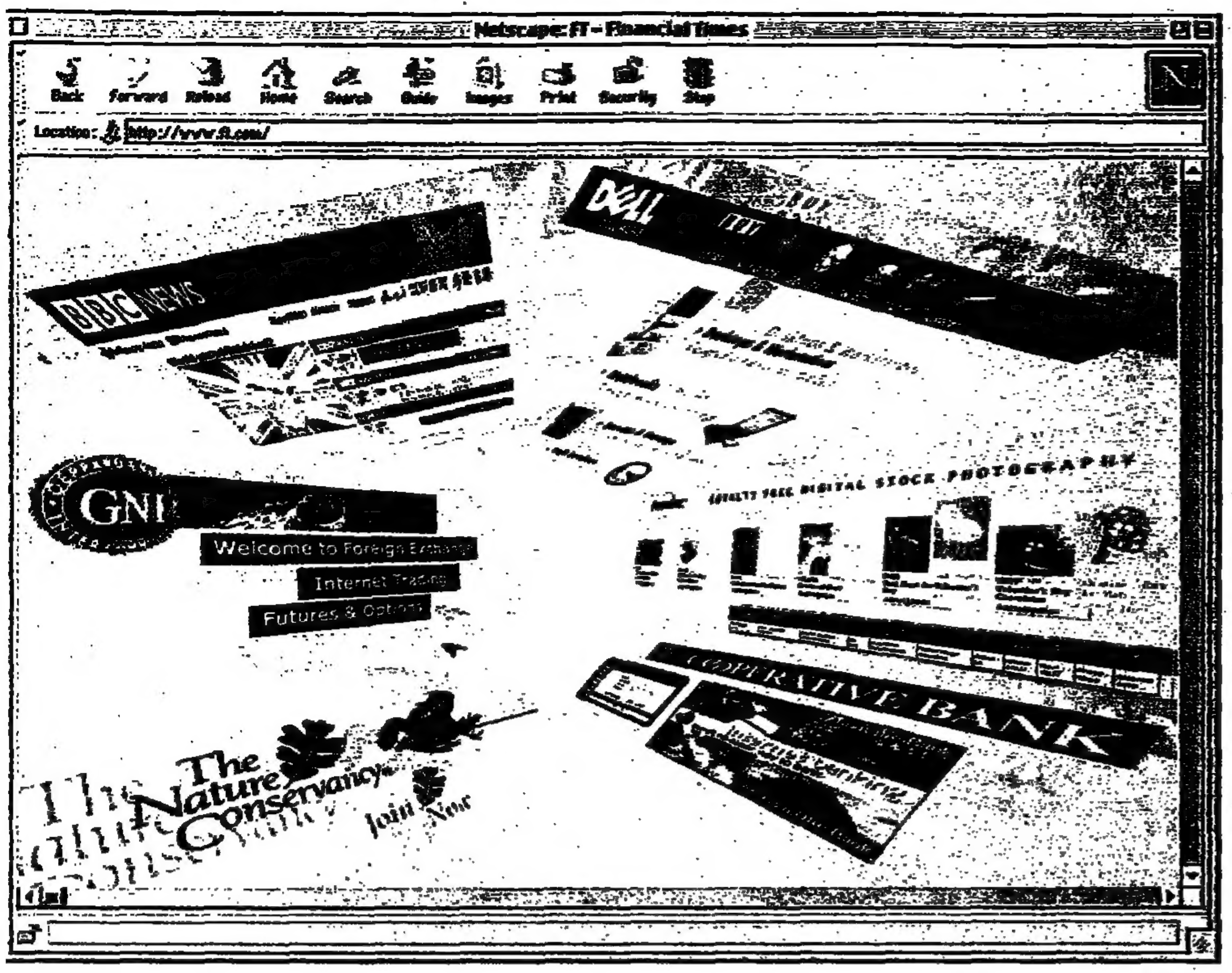
"We had to deliver," he says. "As dates for each function – such as so many gates working with the smartcard – were met, the other sub-contractors were free to get on with their jobs in parallel with ERG and JM & Co."

Octopus had to support six different transit operators using railways, metro lines, buses and ferries, making this the first smartcard fare system to be integrated across completely different methods of transport. It needed to perform 4m transactions in a six-hour period.

The Manila operation of JM & Co wrote the Octopus software, a team in Hong Kong installed it and a third independent team was responsible for verification. Sun Computers and Oracle were among 17 different suppliers to be managed within the JM & Co cycle of development and testing.

The system was delivered three days ahead of schedule, on June 27, 1997, and had 1.5m users on the first day. Now, HK$23m (US$3m) passes through Octopus every day, with more than 8m cards in circulation.

Octopus cards can be used at public telephones and further applications of the core system are under test. Today, there are 10m Octopus cards in circulation in Hong Kong.



FT BUSINESS WEB SITES OF 1998 – in association with UUNET

Winning web sites

From a record number of entries, the category winners for the FT Business Web Site of the Year awards were announced in London this week

Some of the world's top web sites were honoured this week at the awards presentation for the competition to find the FT Business Web Site of 1998. Sue MacGregor, the BBC radio and television personality, presented the awards.

The competition, in its second year, is sponsored by UUNET, an MCI WorldCom company and leader in Internet communications solutions, in partnership with the FT. More than 120 companies entered the competition, a big rise from last year.

The competition differs from other web events by focussing on business benefits. Judges assess how organisations use their sites to achieve commercial advantage.

The judges were: from UUNET – Richard Heyes, UK managing director, Denise Fellows, product and solutions director, Henry Ritson, web specialist and international marketing communications manager; from the Financial Times – Paul Maidment, editor of FT.com, and Paul Taylor, IT Correspondent.

The entries were divided into sectors ranging from large organisations to small enterprises and including the public sector. The judges again found it necessary to select more than one winner in some categories and more than one highly commended to reflect the high quality of entries.

They also introduced a new category, Sites to Watch, to recognise web sites which were especially innovative.

Winners and finalists in each category were as follows:

Large corporates

□ **Winner: Dell, Europe**
http://www.dell.co.uk
Dell's European web sites were among the first to be online business-enabled and now conduct over $5m of sales per week.

Customers can review, configure and price systems within Dell's entire product line, order systems online or by telephone, and track orders from manufacturing through shipping. The site also offers personalised system-support pages and more than 45,000 technical service items.

□ **Highly commended:**
Cellnet – *http://www.genie.co.uk*.
Genie is a service unique to Cellnet which delivers tailored news and information direct to Cellnet digital phones or an e-mail address from the Genie web site.

It has four clear strategies: business – to stimulate more calls; marketing – to develop a direct relationship with the end customer; technical – to provide best practice functionality to mobile users; and creative – to create a web product with leading edge design.

> **A series of case studies featuring these winning web sites will appear in the monthly FT-IT Review next year**

□ **Highly commended: Eastman Kodak** – *http://www.kodak.com.*
This focusses on ways of making people excited about the power of pictures, while at the same time building the brand and strengthening market share.

□ **Highly commended: RS Components** – *http://www.rswww.com.*
This site provides seamless integration into existing order processing and same day despatch of 100,000 stock items.

Finance Sector

□ **Joint winners:**
GNI and the Co-operative Bank
□ **GNI:** *http://www.gni.co.uk*
The site was established to provide data on GNI's broking services in global derivatives markets and to distribute research.

The site has revolutionised GNI's marketing. The demand for access to GNI's research, and the number of users downloading the FX Internet Trading system – complete with live FX prices fed to the user from major global banks – has been extremely high.

□ **The Co-operative Bank:**
http://www.co-operativebank.co.uk
The Co-operative Bank's online banking service was designed by Entranet. Available free to existing and new customers, the Internet banking service was used by more than 12,000 customers in its first six weeks for 250,000 transactions from 20 countries.

□ **Highly commended: ICICI Bank** – *http://www.icicibank.com*
Back for the second year is the ICICI Bank's web site. It was initially targeted at a well defined, but hard to reach, segment of customers – non-resident Indians.

When Internet usage picked up in India, the focus was expanded to include resident Indians. Early this year, Infinity – the Internet Banking service – was introduced.

Small to Medium Enterprises

□ **Winner: Photodisc Europe**
http://www.photodisc.com
The first PhotoDisc site was a marketing only presence. It was designed to promote photographers' images to a world-wide audience of target customers, namely graphics and communications professionals. The site allows customers to search quickly and efficiently through over 60,000 images and purchase and download those they need.

□ **Highly commended: Ministry of Sound** – *http://www.ministryofsound.co.uk*
This site claims now to be the world's best club web site.

□ **Highly commended: Seanet** – *http://www.seanet.co.uk*
Back for the second year, SeaNet serves the needs of the international maritime community by combining information provision, a trading area and a secure e-mail system.

Public Sector

□ **Winner: BBC News Online**
http://www.news.bbc.co.uk
BBC News Online was launched in November, 1997. It was created as part of a BBC-wide strategy that targets the web as the third broadcast medium and one that will expand rapidly.

□ **Highly commended: Foreign and Commonwealth Office** – *http://www.fco.gov.uk*
Since there are 220 diplomatic posts representing Britain across the world, this site has a global remit. The site provides up-to-date news for those abroad and allows instant access to the FCO's standpoint on foreign countries.

□ **Highly commended: The Army Recruiting Group** – *http://www.army.mod.uk/army/recruit*
The British Army World Challenge, a series of interactive scenarios leading to an online application facility, was launched to complement the army's above-the-line campaign.

Not for profit

□ **Winner: The Nature Conservancy** – *http://www.tnc.org*
The basic goals for this site are: to raise awareness of the organisation; to use technology to create content that would raise funds for land acquisition programmes; and to create a central information resource about the organisation.

Sites to watch

□ **Joint winners: Road Tech Computer Systems and TIMBERWeb**
□ **Road Tech Computer Systems:** *http:// www.roadrunner.uk.com*
An estimated 35 per cent of all haulage on the road is empty. Roadrunner aims to fill up these empty vehicles through its web site.

□ **TIMBERWeb:** *http://www.timberweb.co.uk*
TIMBERWeb is a focus for the world timber and forest products industries. Companies subscribe via business card entries which list vital company information.

LOOKING AHEAD

FT REVIEW OF INFORMATION TECHNOLOGY

A fresh focus on IT in finance and e-commerce in 1999

Special features planned for next year's FT Review of Information Technology will highlight the rapid shift towards Internet-related business opportunities

The shape of things to come is the key theme in the next issue of the FT-IT Review on January 6, 1999. This futuristic issue will examine the likely impact of IT in a wide range of business sectors in the next decade.

From February onwards, the review, which is published on the first Wednesday of each month, will carry regular features on:
□ IT in finance, with a special focus each month.
□ Electronic business
□ The millennium date issue and euro compliance.
□ IT news update.

Each issue will include a main theme, with a cover story on a topic of key importance to IT users, plus views of leading suppliers in the IT industry.

During the year, there will also be a series of mid-month reviews on business solutions, highlighting enterprise resource planning, managed services and knowledge management systems.

February

□ Main theme: IT and the Customer, (Customer Relationship Management, CRM).
□ Second theme: Green computing.
□ Plus regular features including: IT in finance – focus on broking; electronic business; update on the millennium date issue; and the race for euro compliance.

March

□ This month the world's largest IT show takes place in Hannover, Germany, and our main theme will be: the IT industry in transition.
□ Second theme: IT and New Media.
□ Plus regular features including: IT in finance – focus on the European Central Bank; electronic business; update on the millennium date issue; and the race for euro compliance.

April

□ Main theme: Electronic commerce and the wired business.
□ Second theme: Java update.
Plus regular features including: IT in finance – focus on insurance; electronic business; update on the millennium date issue; and the race for euro compliance.

May

□ Main theme: Mid-sized enterprises: selecting an IT strategies.
□ Second theme: Telecommunications – increasing convergence in information and communication technologies.

June

□ Main theme: Windows – what's at stake?
□ Second theme: IT in manufacturing (cad/cam).
□ Plus regular features including: IT in finance – an emphasis on personal finance; electronic business; update on the millennium date issue; and the race for euro compliance.

> **Monthly themes on IT in finance during 1999 will range from insurance and investment banking to retail banking, venture capital, broking, and the European Central Bank**

July

□ Main theme: Internet issues.
□ Second theme: IT and the Law in the run-up to the year 2000.
□ Plus regular features including: IT in finance – focus on retail banking; electronic business; update on the millennium date issue; and the race for euro compliance.
□ *There will be no issue of the review in August.*

September

□ Main theme: IT in Retailing.
□ Second theme: Supply Chain Management.
Plus regular features including: IT in finance – focus on risk management; electronic business; update on the millennium date issue; and euro compliance.

October

□ Main theme: Continuity planning in the aftermath of the millennium "bomb".
□ Second theme: IT in Education.
□ Plus regular features including: IT in finance – focus on investment banking; electronic business; update on the millennium date issue; and the race for euro compliance.

November

□ Main theme: Continuity Planning (II).
□ Second theme: IT in Travel and Leisure.
□ Plus regular features including: IT in finance – focus on fund management; e-business; the millennium date issue; and euro compliance.

December

□ Main theme: The Cyber Millennium.
□ Second theme: IT in the search for the stars.

Special mid-month series on business solutions

During the year, we plan to include a series of special issues:
□ Business solutions: Enterprise Resource Planning.
□ Business solutions: Managed services and outsourcing – a $55bn market.
□ Business solutions: Knowledge Management.

For more details

□ During the year, our editorial fax-u-back service will give detailed synopses, two months in advance of each issue. Callers in the UK should dial 0990 209 903; fax machines should be in polling mode. Callers outside the UK should dial +44 990 209 903.
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